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# (12) United States Patent
**Tosaya**

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(45) **Date of Patent: *Apr. 15, 2003**

(54) **PORTABLE CONFERENCE CENTER**

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(73) Assignee: **Electronics for Imaging, Inc.**, Foster City, CA (US)

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This patent is subject to a terminal disclaimer.

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**Related U.S. Application Data**

(63) Continuation of application No. 09/428,305, filed on Oct. 27, 1999.

(51) **Int. Cl.**[7] .................................................. **H04N 7/14**

(52) **U.S. Cl.** ................................ **348/14.08**; 348/14.02; 348/14.03

(58) **Field of Search** ........................... 348/14.01, 14.02, 348/14.03, 14.04, 14.05, 14.07, 14.08, 14.09, 14.1, 14.11, 14.12, 14.13

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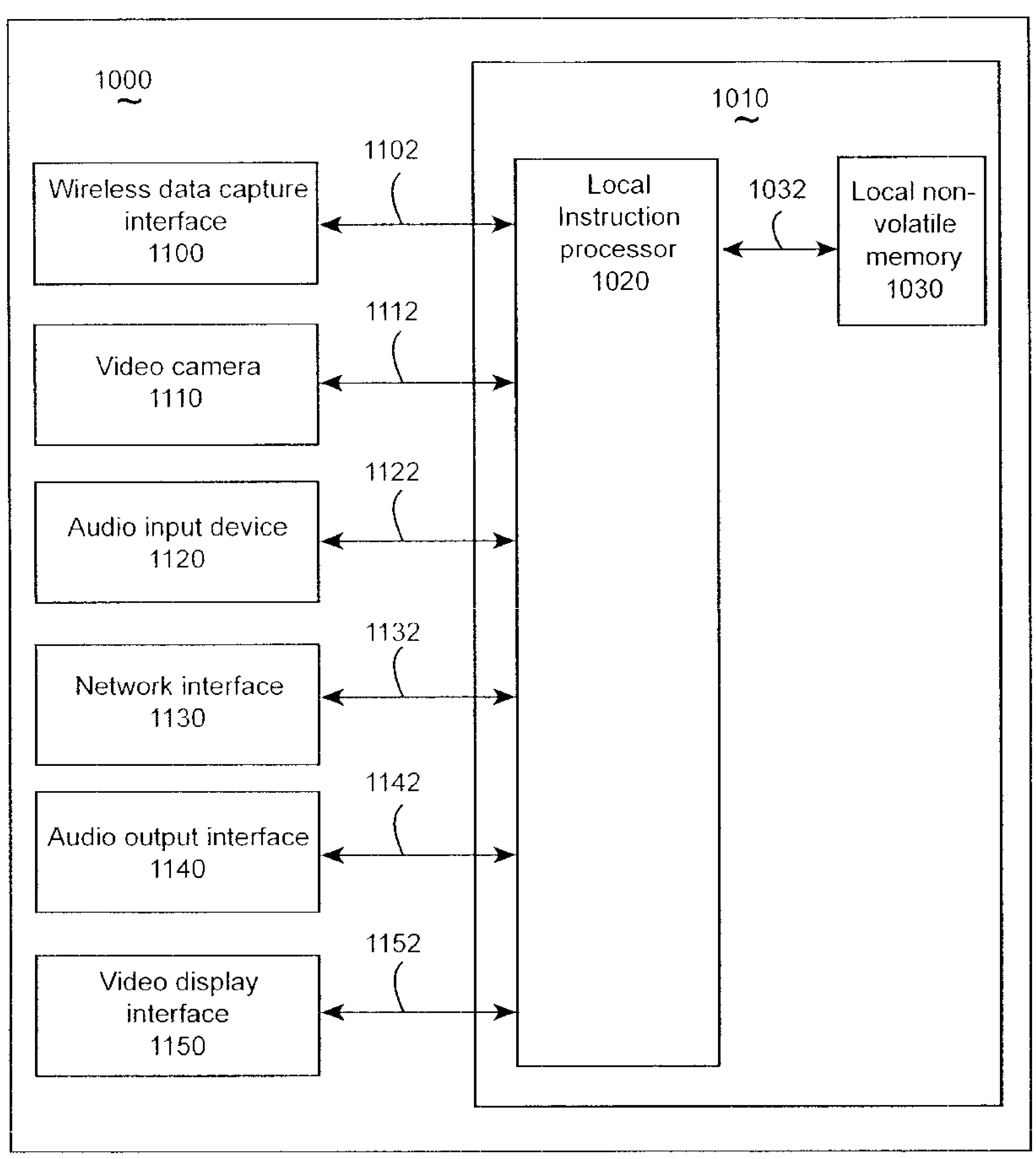
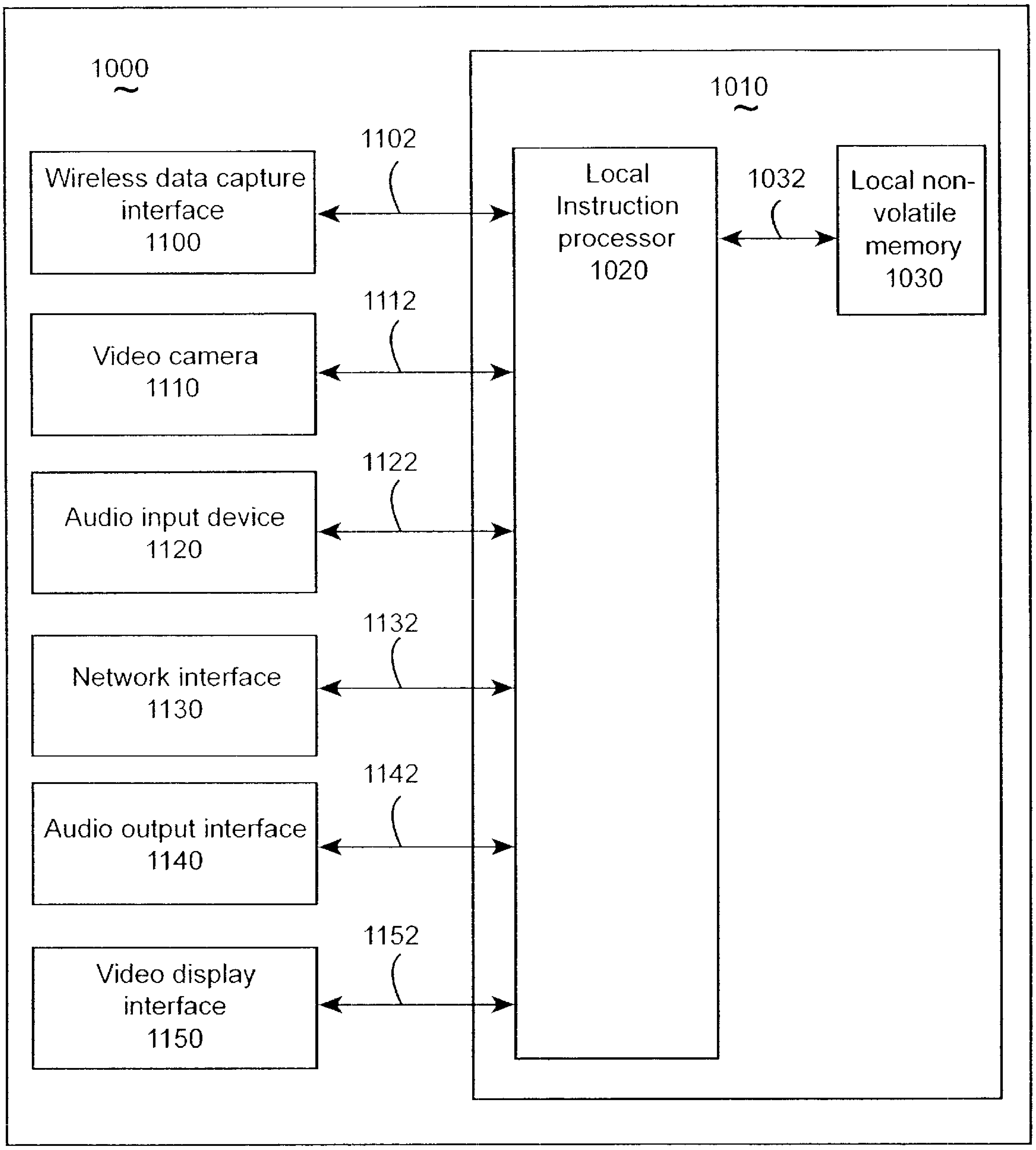
*Primary Examiner*—Melur Ramakrishnaiah

(57) **ABSTRACT**

A portable video conference module supporting a network-based video conference comprising a processor, a video camera, and audio input device and several interfaces coupled to the processor. The processor includes a local instruction processor accessing a local non-volatile memory. The interfaces include a wireless data capture interface, a video display interface, an audio output interface and a network interface.

**8 Claims, 22 Drawing Sheets**

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1010
Wireless data capture interface 1100
1102
Video camera 1110
1112
Audio input device 1120
1122
Network interface 1130
1132
Audio output interface 1140
1142
Video display interface 1150
1152
Local Instruction processor 1020
1032
Local non-volatile memory 1030

Fig. 1

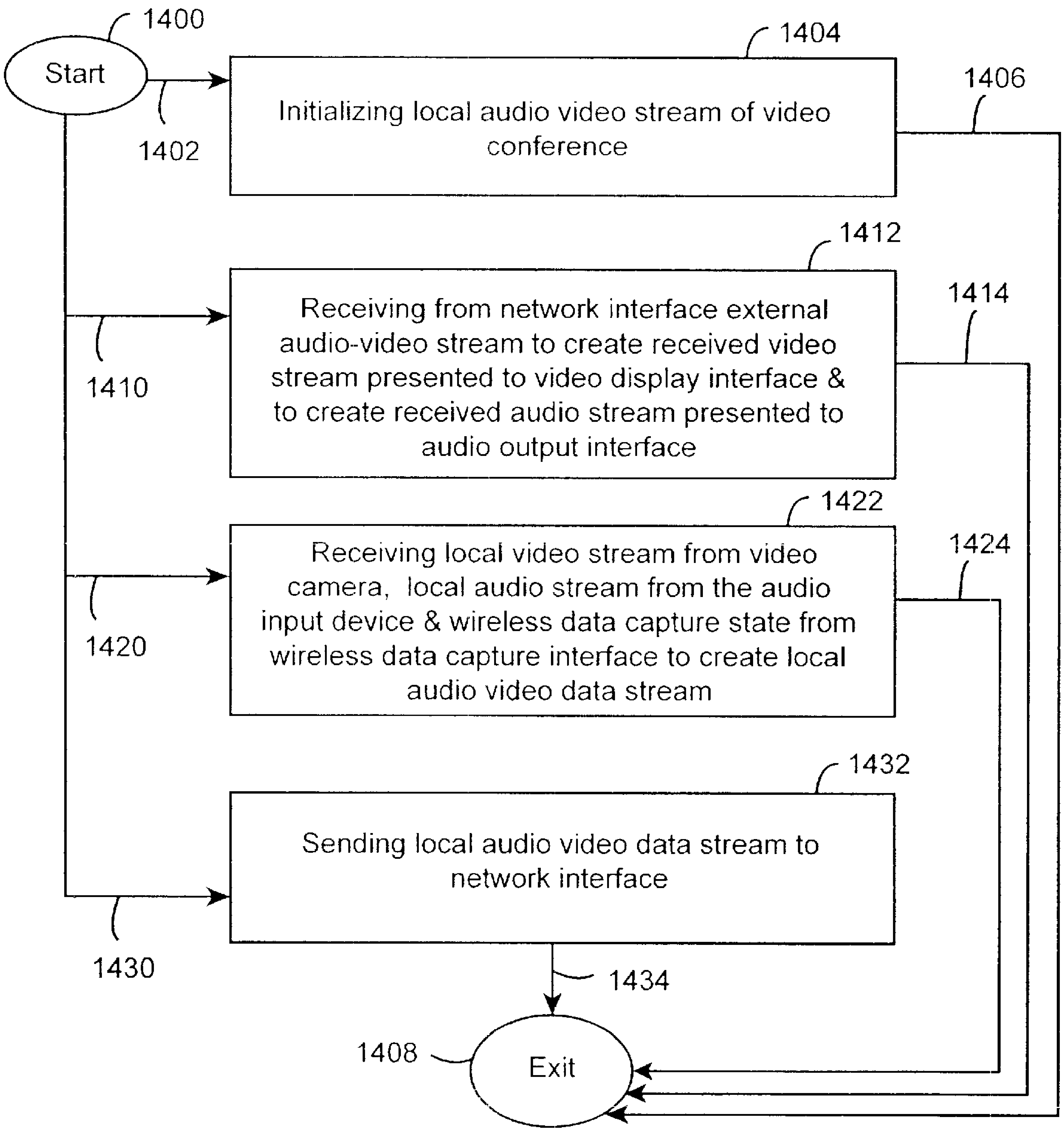
1400
Start
1402
1404
Initializing local audio video stream of video conference
1406
1412
Receiving from network interface external audio-video stream to create received video stream presented to video display interface & to create received audio stream presented to audio output interface
1414
1410
1422
Receiving local video stream from video camera, local audio stream from the audio input device & wireless data capture state from wireless data capture interface to create local audio video data stream
1424
1420
1432
Sending local audio video data stream to network interface
1430
1434
1408
Exit

Fig. 2

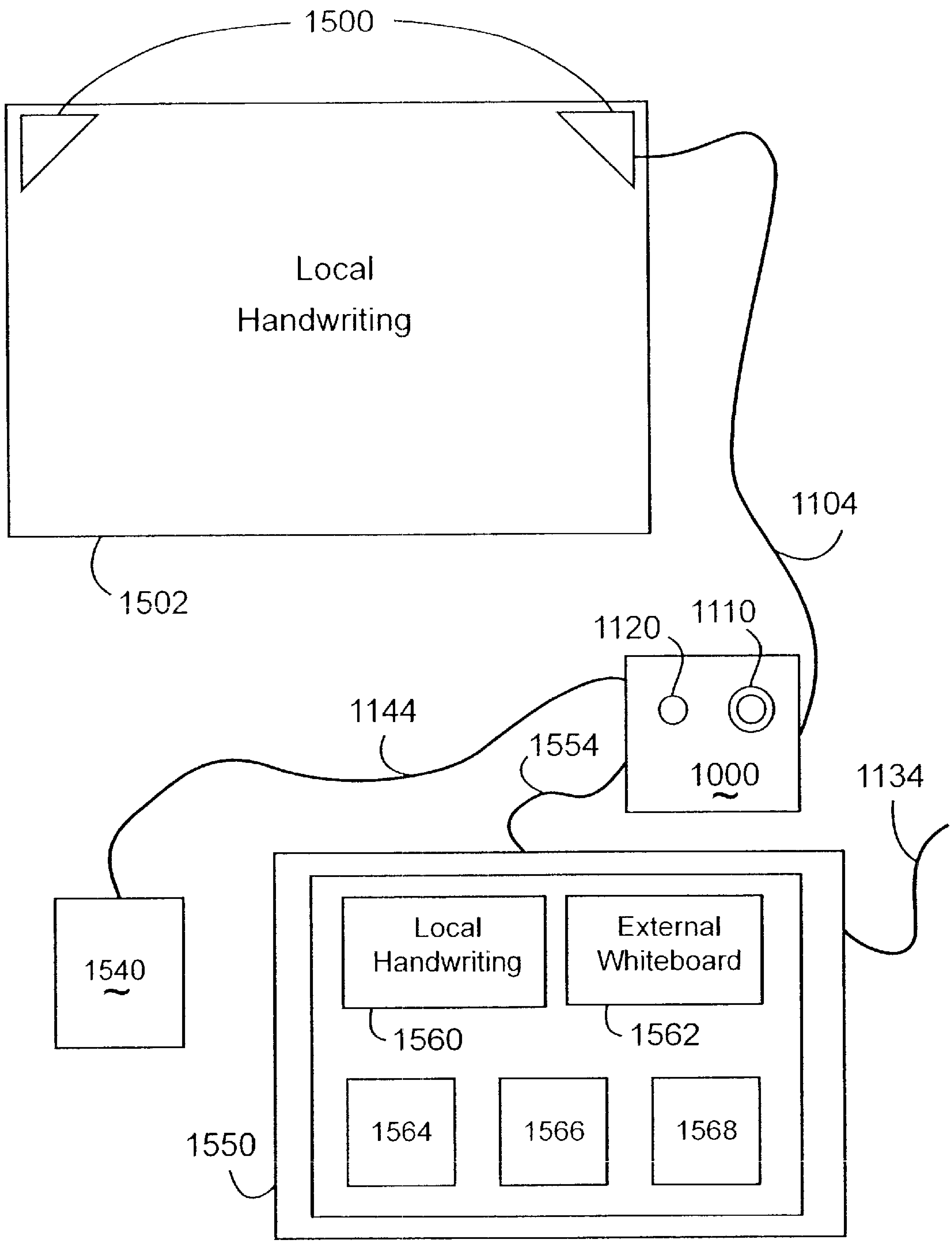
1500
Local
Handwriting
1502
1104
1120
1110
1000
1144
1554
1134
1540
Local
Handwriting
External
Whiteboard
1560
1562
1564
1566
1568
1550

Fig. 3

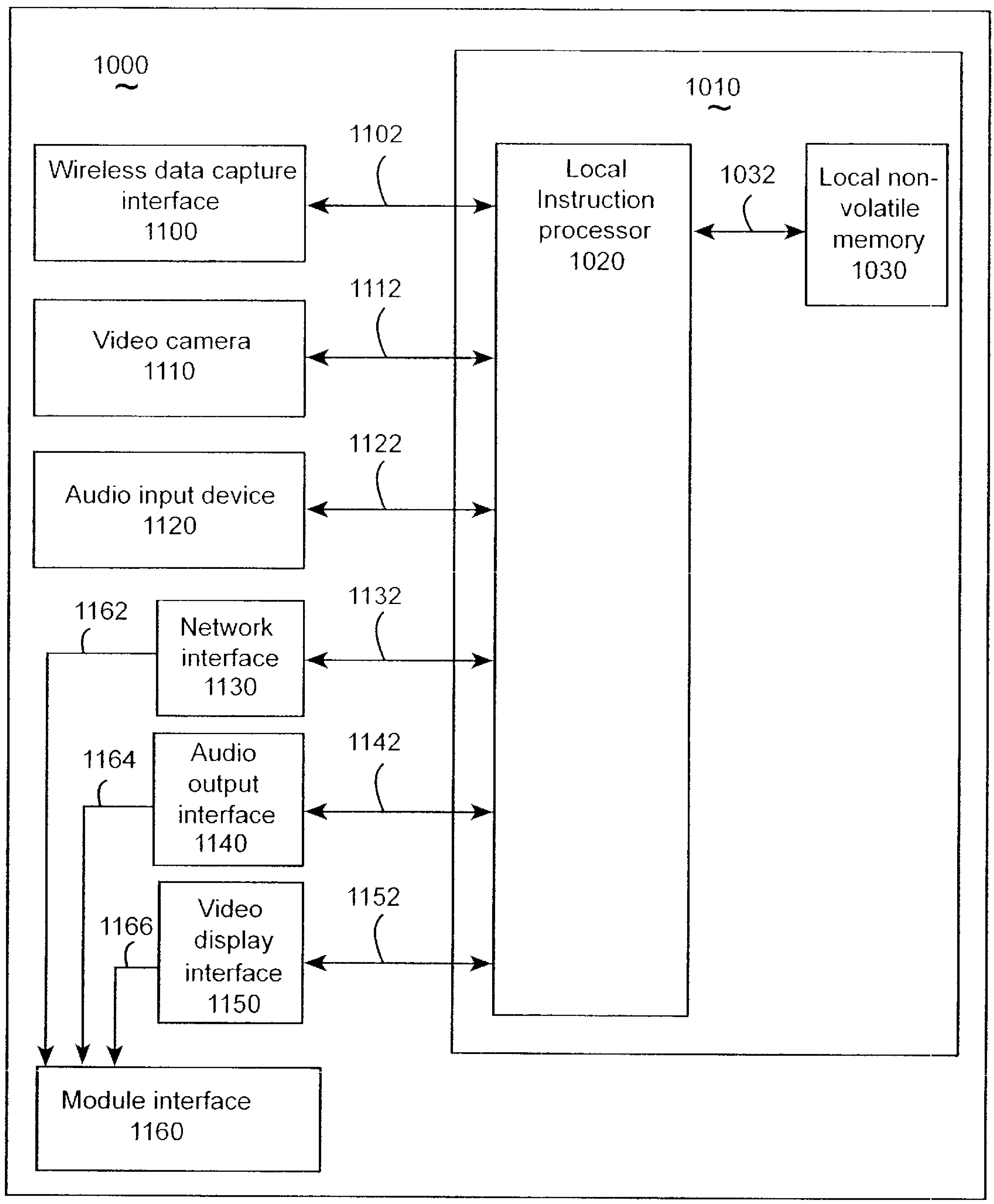
1000
1010
1102
Wireless data capture interface 1100
Local Instruction processor 1020
1032
Local non-volatile memory 1030
1112
Video camera 1110
1122
Audio input device 1120
1162
Network interface 1130
1132
1164
Audio output interface 1140
1142
1166
Video display interface 1150
1152
Module interface 1160

Fig. 4

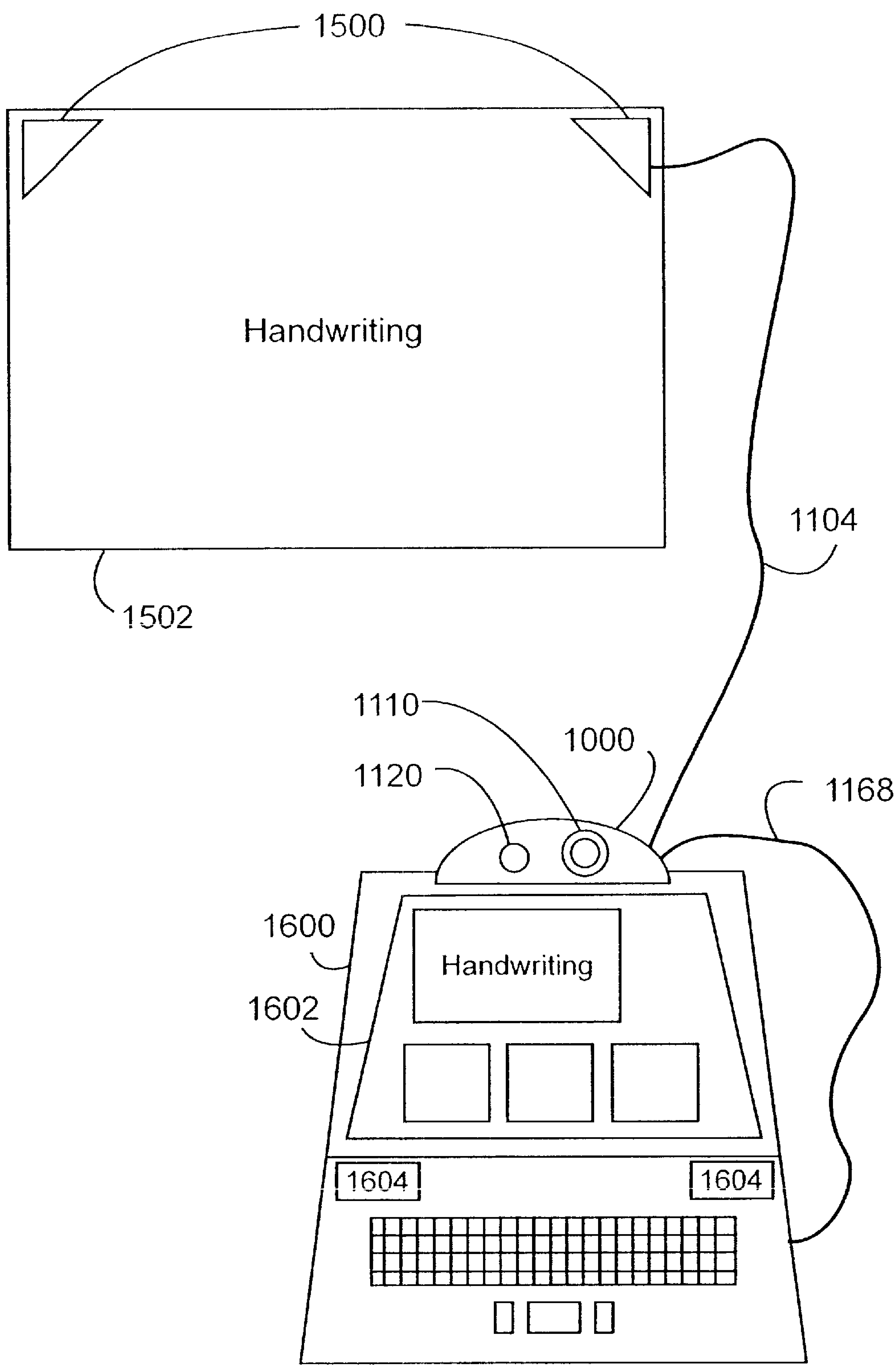
1500
Handwriting
1502
1104
1110
1000
1120
1168
1600
Handwriting
1602
1604
1604

Fig. 5

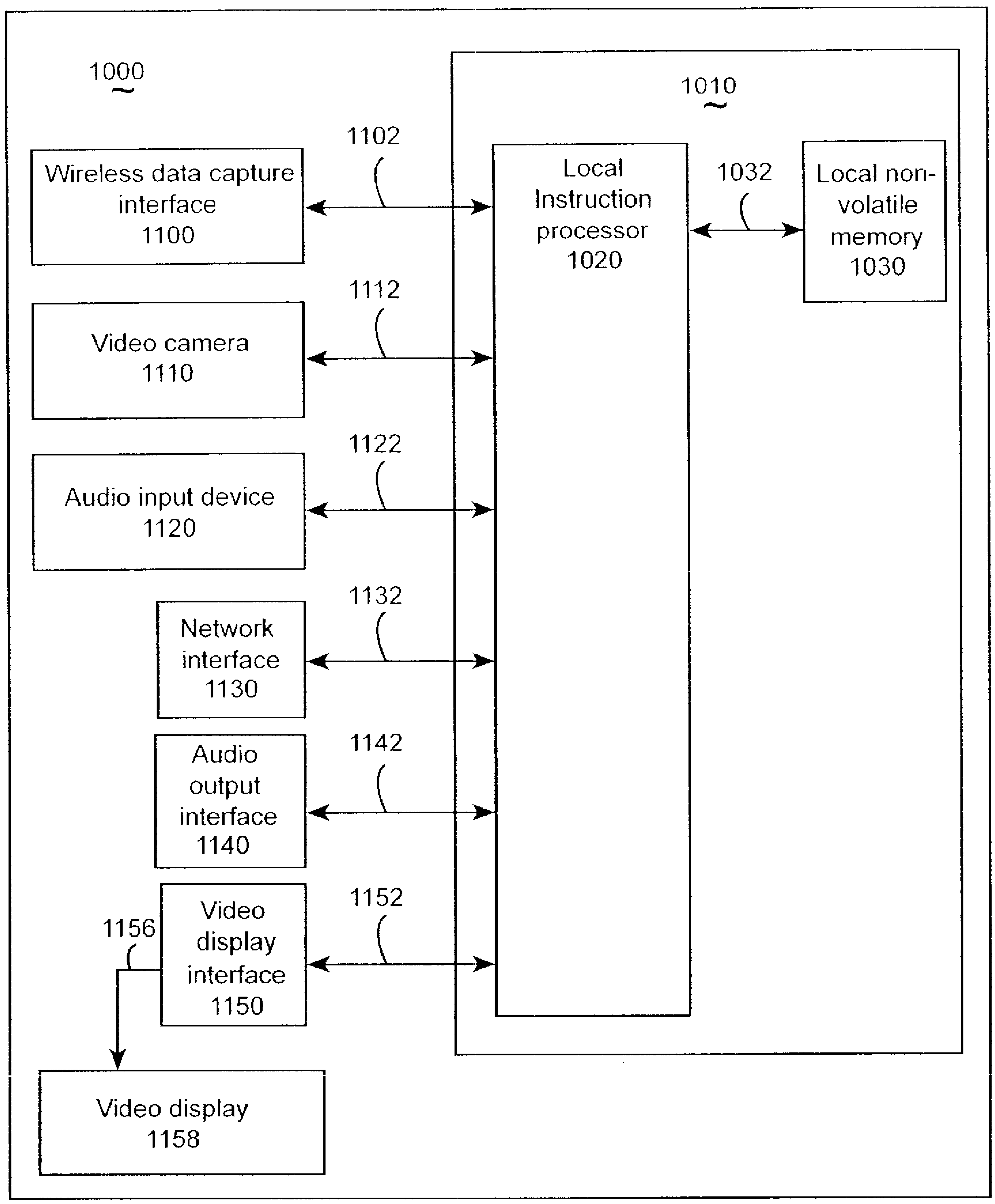
1000
1010
1102
Wireless data capture interface 1100
Local Instruction processor 1020
1032
Local non-volatile memory 1030
1112
Video camera 1110
1122
Audio input device 1120
1132
Network interface 1130
1142
Audio output interface 1140
1152
1156
Video display interface 1150
Video display 1158

Fig. 6

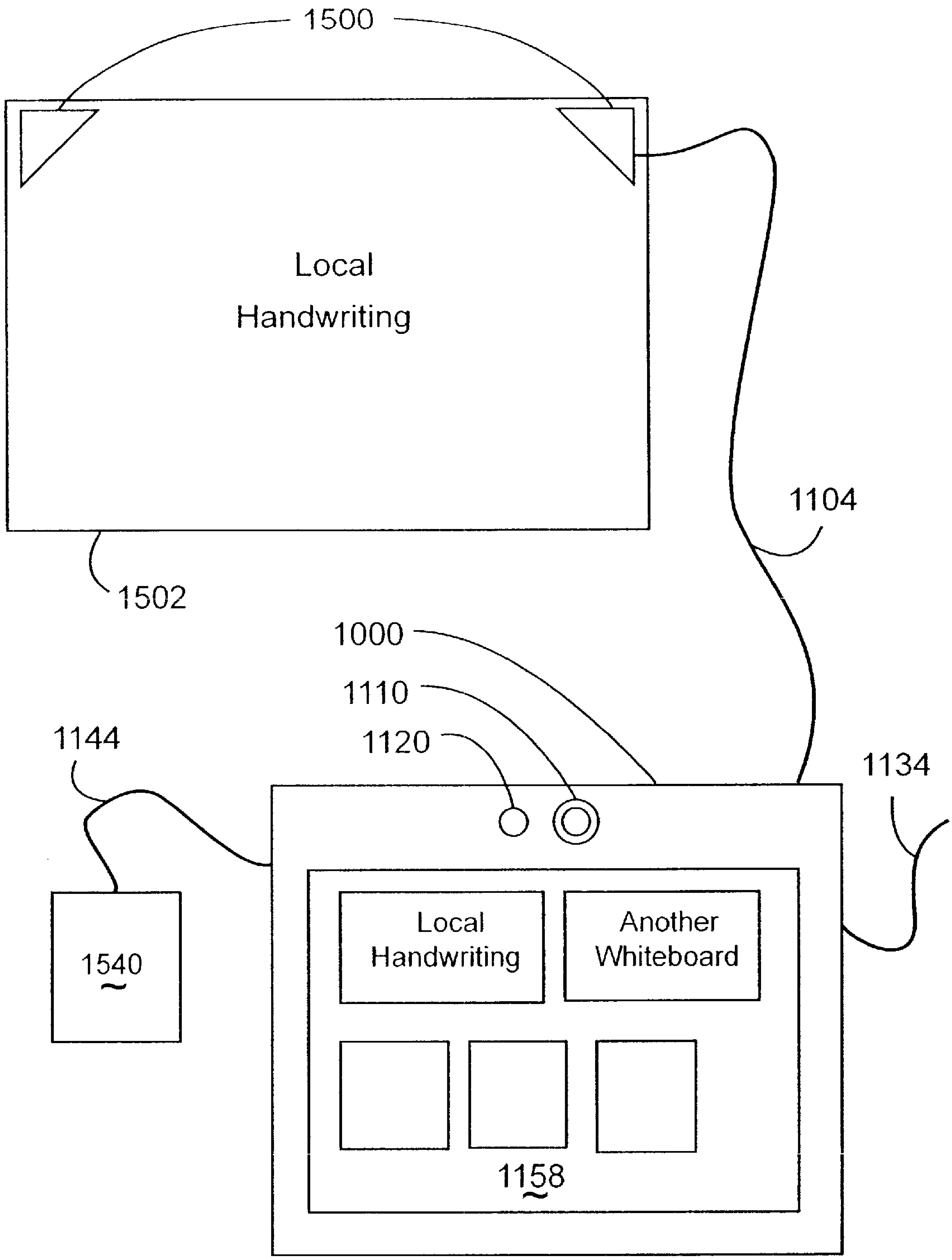
1500
Local
Handwriting
1104
1502
1000
1110
1120
1144
1134
Local
Handwriting
Another
Whiteboard
1540
1158

Fig. 7

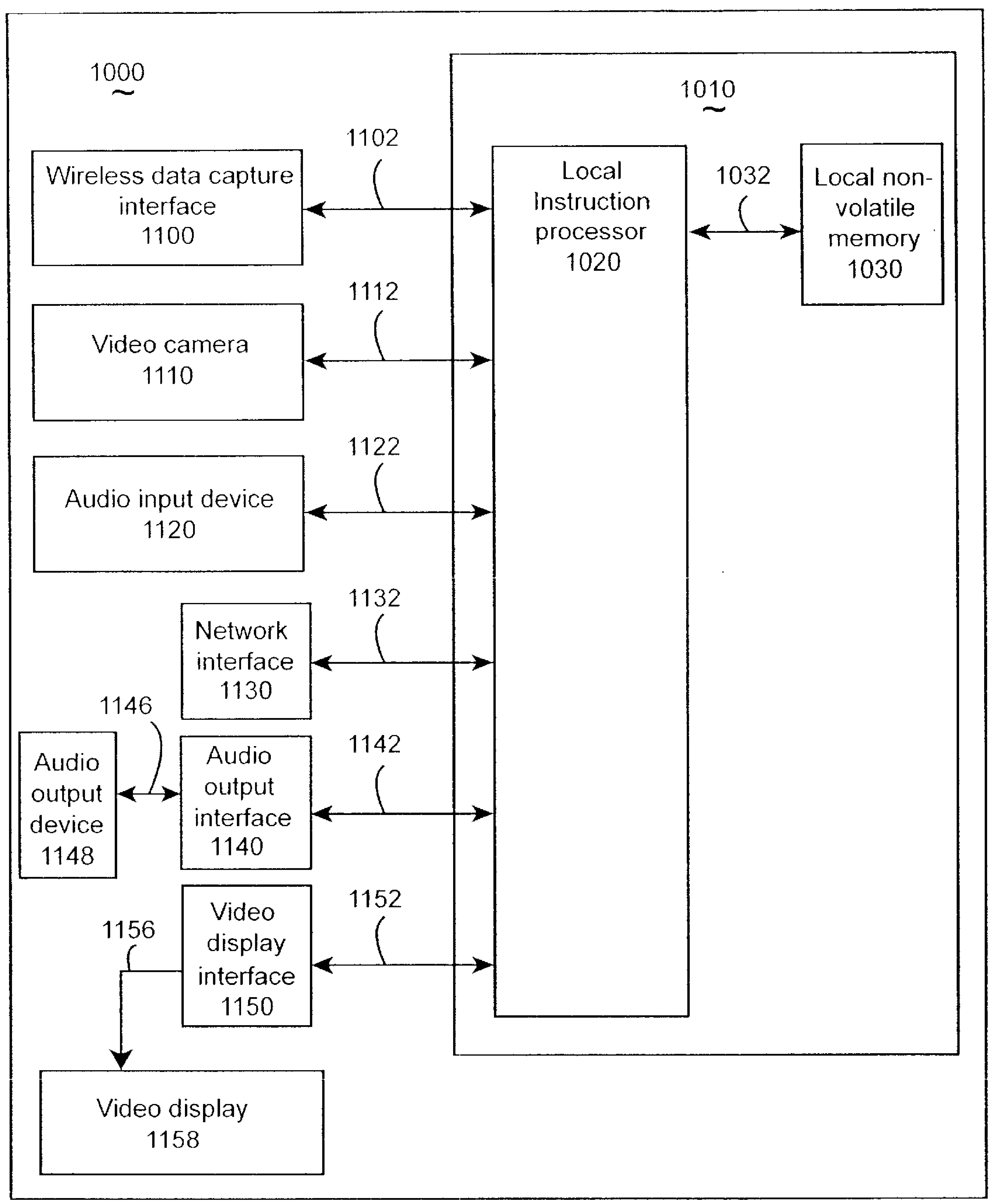
1000
1010
1102
Wireless data capture interface 1100
Local Instruction processor 1020
1032
Local non-volatile memory 1030
1112
Video camera 1110
1122
Audio input device 1120
1132
Network interface 1130
1146
Audio output device 1148
Audio output interface 1140
1142
1156
Video display interface 1150
1152
Video display 1158

Fig. 8

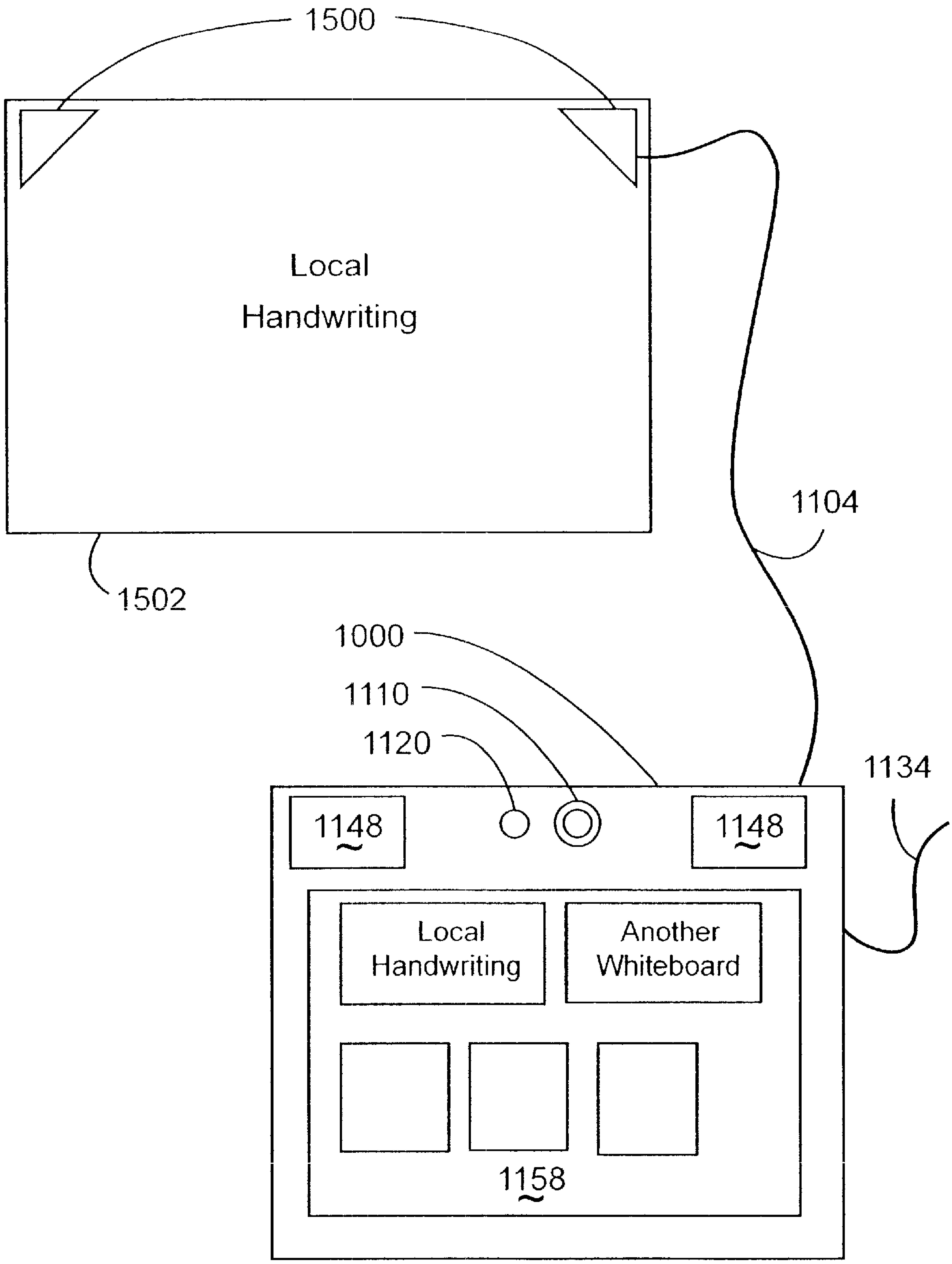
1500
Local
Handwriting
1104
1502
1000
1110
1120
1134
1148
1148
Local
Handwriting
Another
Whiteboard
1158

Fig. 9

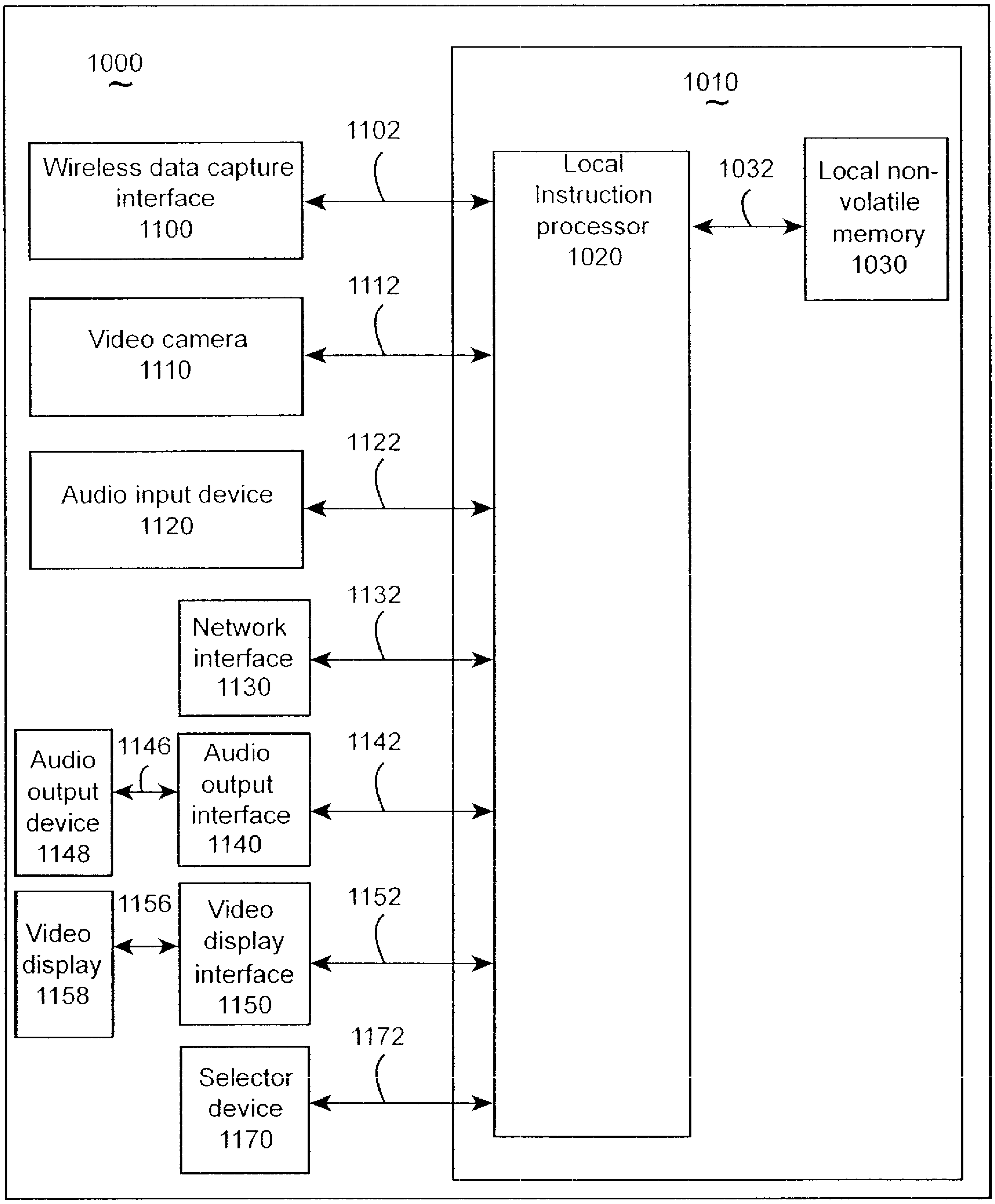
1000
1010
Wireless data capture interface 1100
1102
Local Instruction processor 1020
1032
Local non-volatile memory 1030
1112
Video camera 1110
1122
Audio input device 1120
1132
Network interface 1130
Audio output device 1148
1146
Audio output interface 1140
1142
Video display 1158
1156
Video display interface 1150
1152
1172
Selector device 1170

Fig. 10

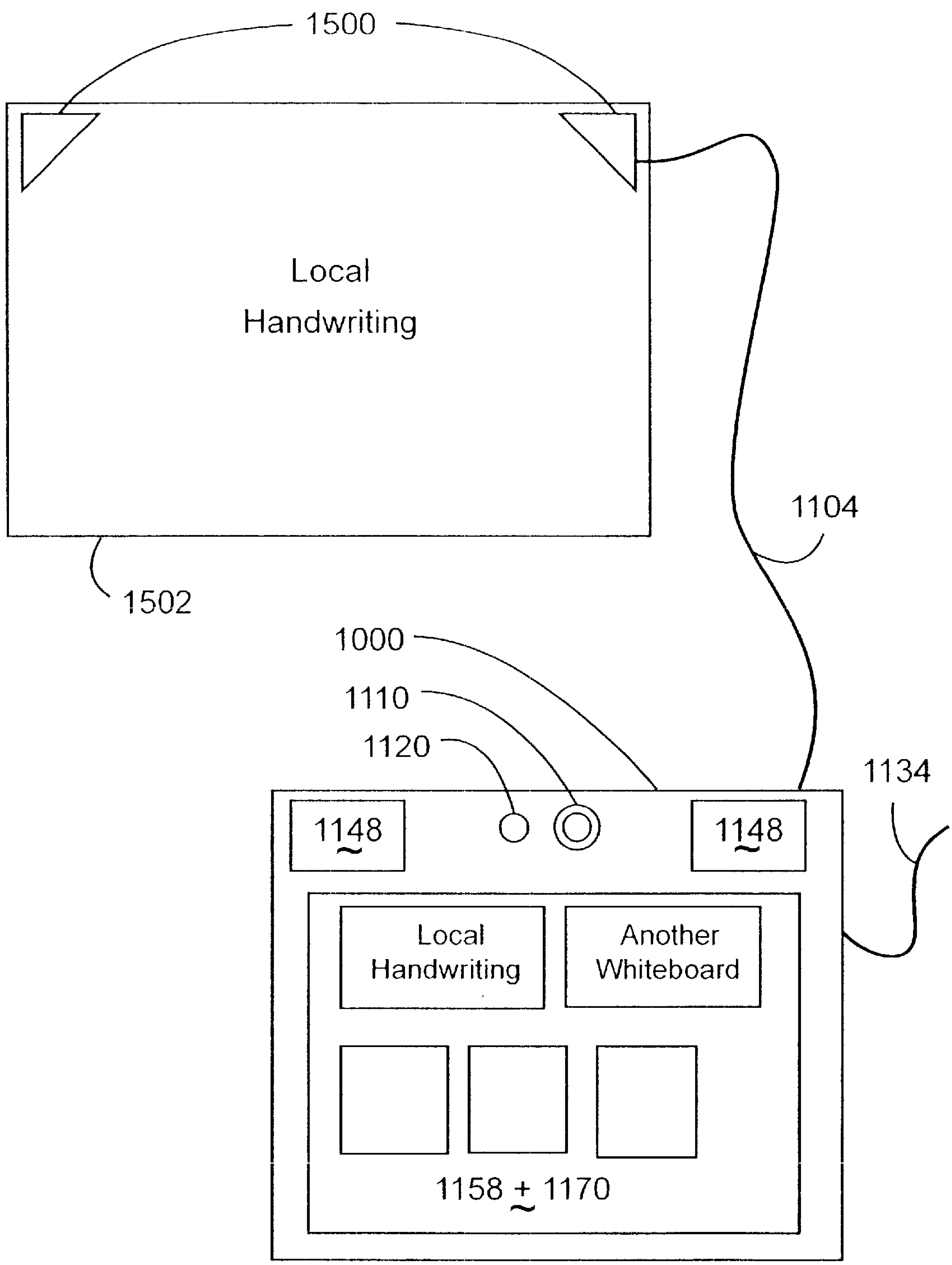
1500
Local
Handwriting
1104
1502
1000
1110
1120
1134
1148
1148
Local
Handwriting
Another
Whiteboard
1158 + 1170

Fig. 11

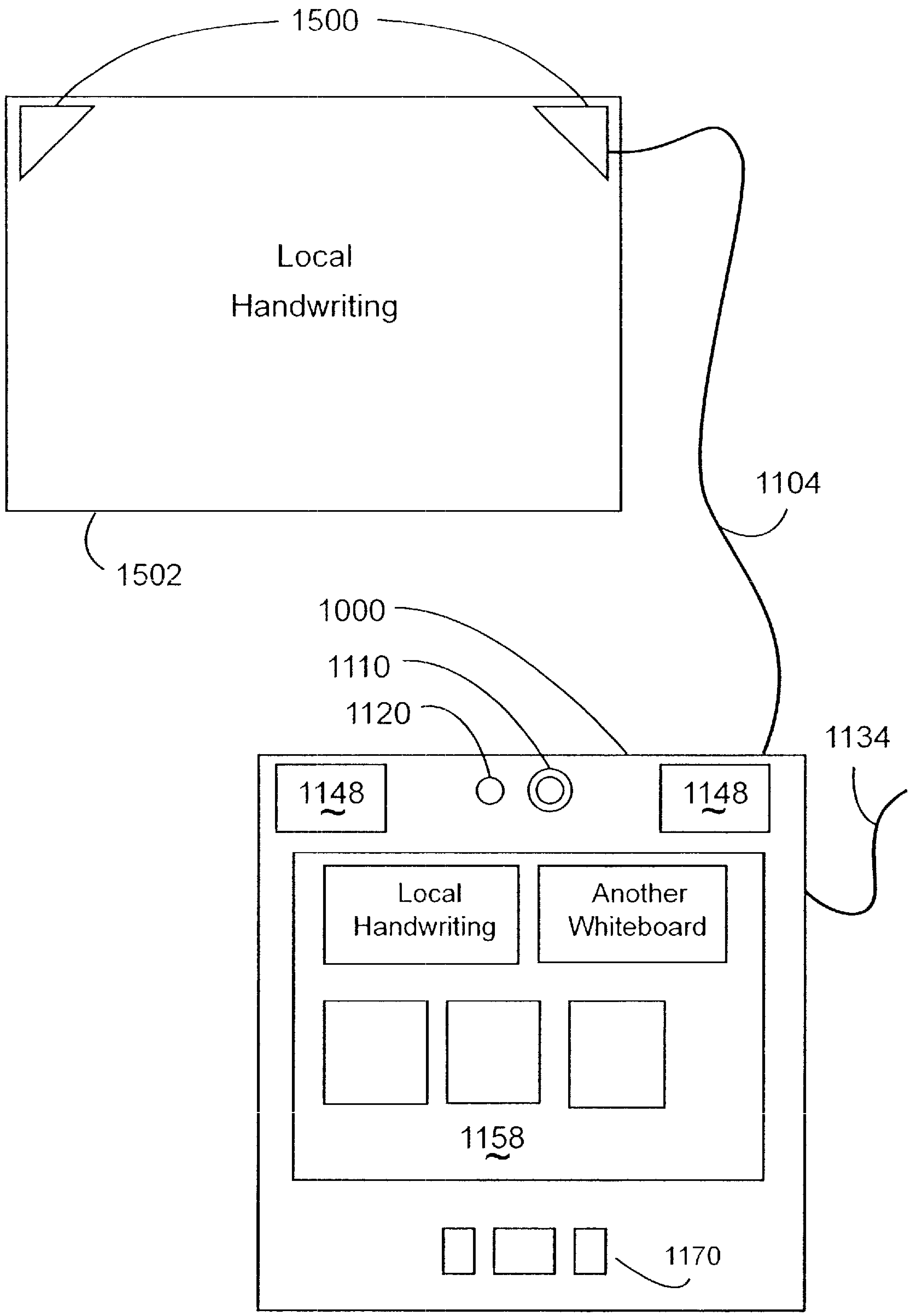
1500
Local
Handwriting
1502
1104
1000
1110
1120
1134
1148
1148
Local
Handwriting
Another
Whiteboard
1158
1170

Fig. 12

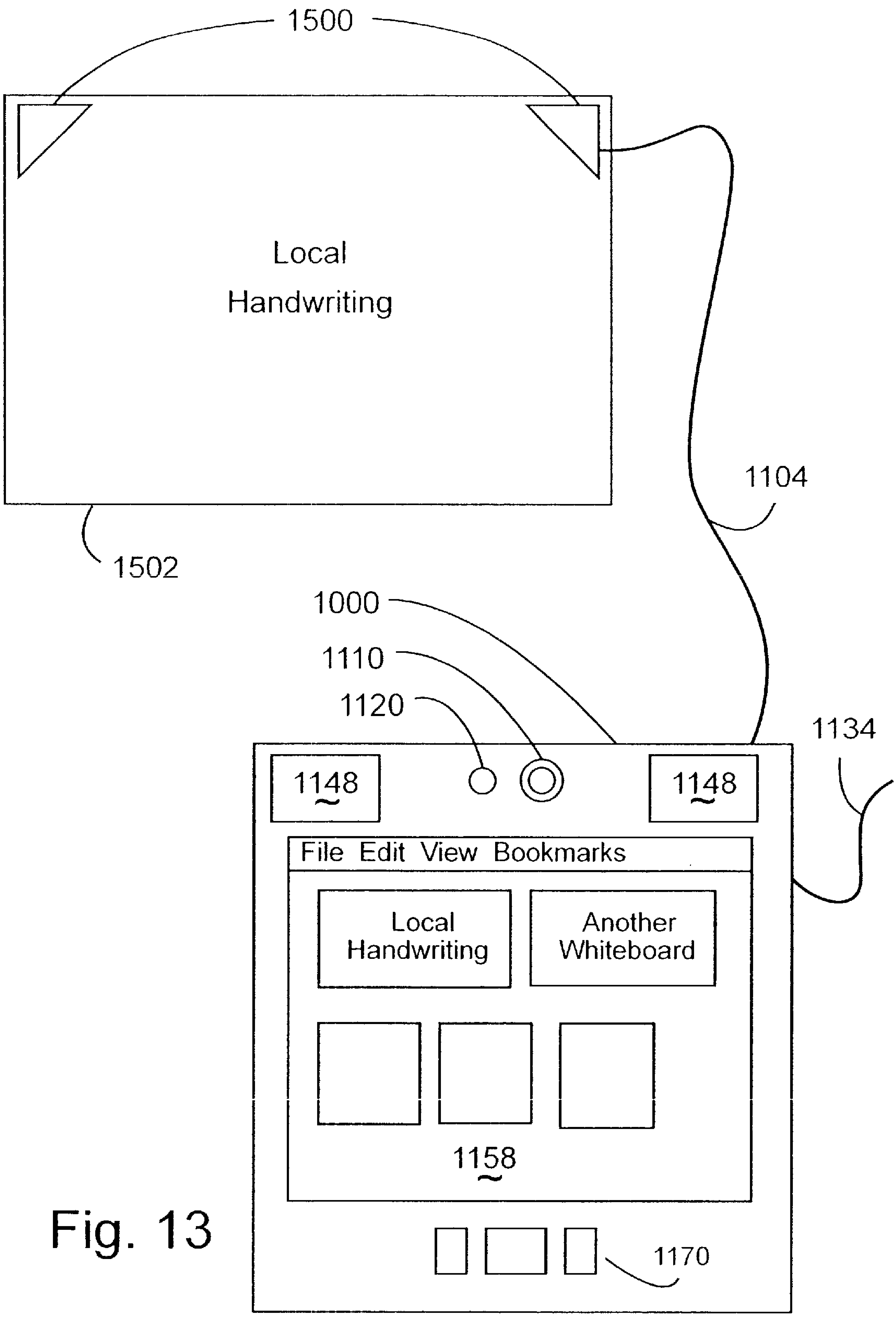
1500
Local
Handwriting
1104
1502
1000
1110
1120
1134
1148
1148
File Edit View Bookmarks
Local
Handwriting
Another
Whiteboard
1158
1170

Fig. 13

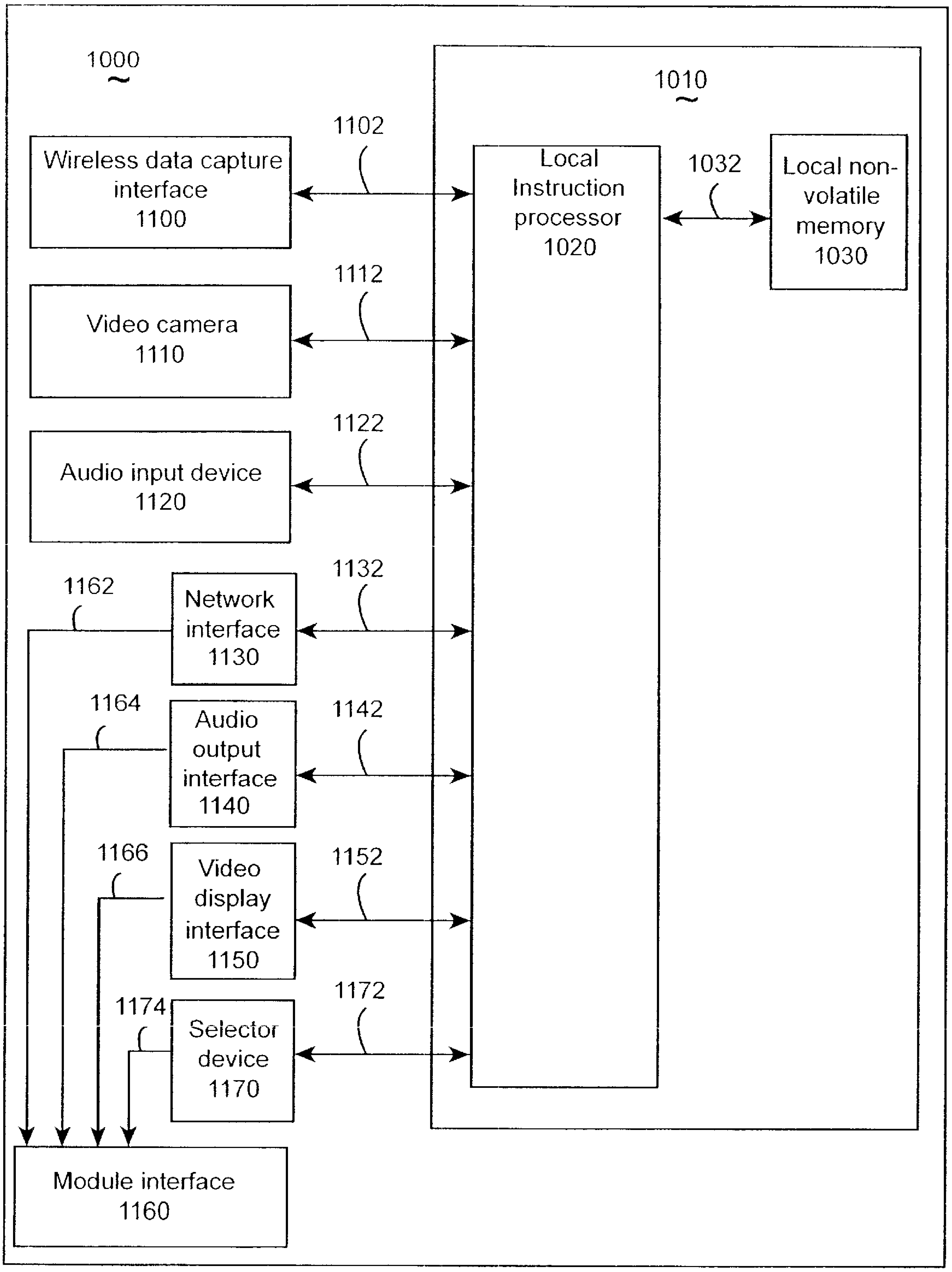
1000
1010
Wireless data capture interface 1100
1102
Local Instruction processor 1020
1032
Local non-volatile memory 1030
Video camera 1110
1112
Audio input device 1120
1122
1162
Network interface 1130
1132
1164
Audio output interface 1140
1142
1166
Video display interface 1150
1152
1174
Selector device 1170
1172
Module interface 1160

Fig. 14

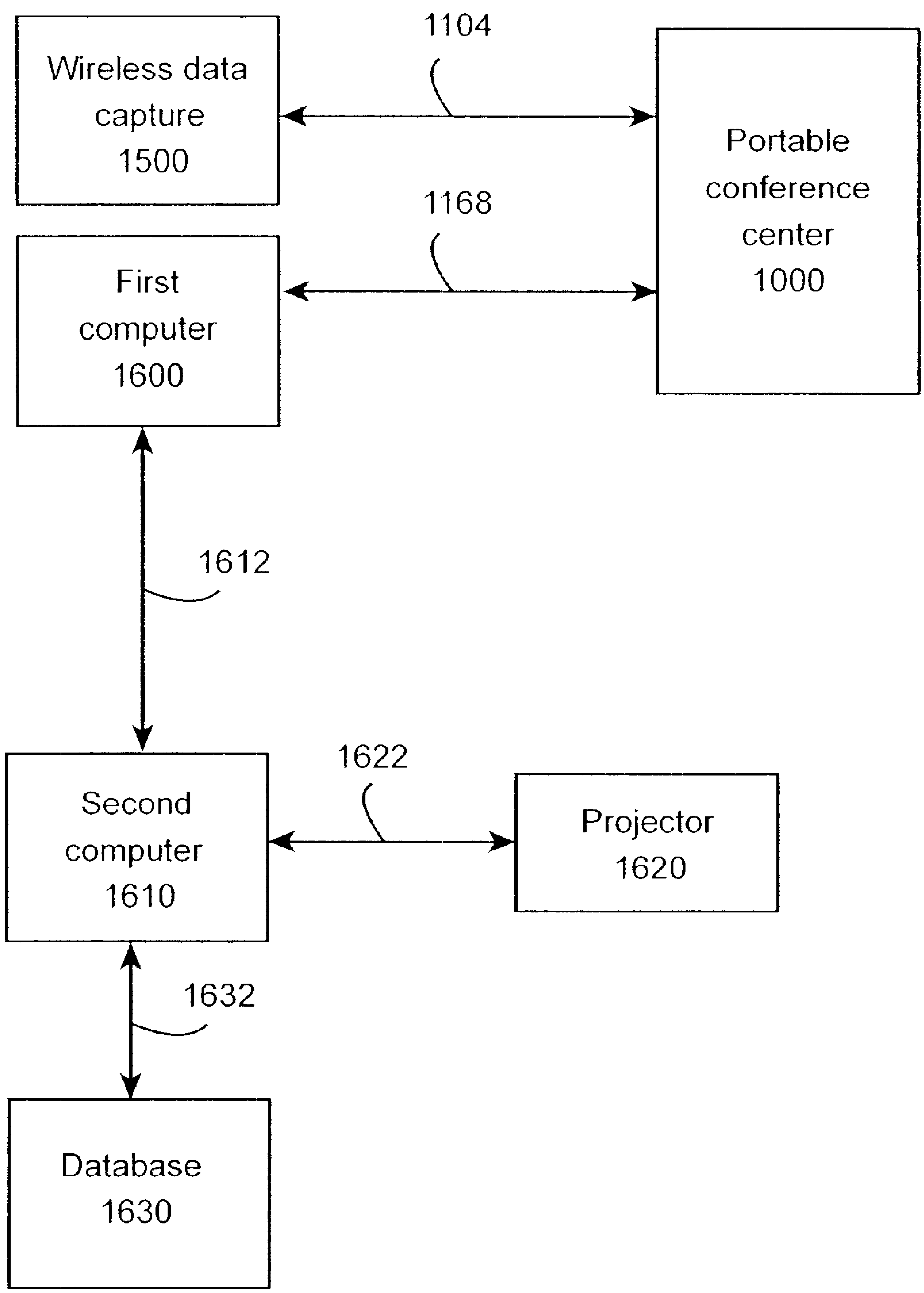
Wireless data capture 1500
1104
Portable conference center 1000
1168
First computer 1600
1612
Second computer 1610
1622
Projector 1620
1632
Database 1630

Fig. 15

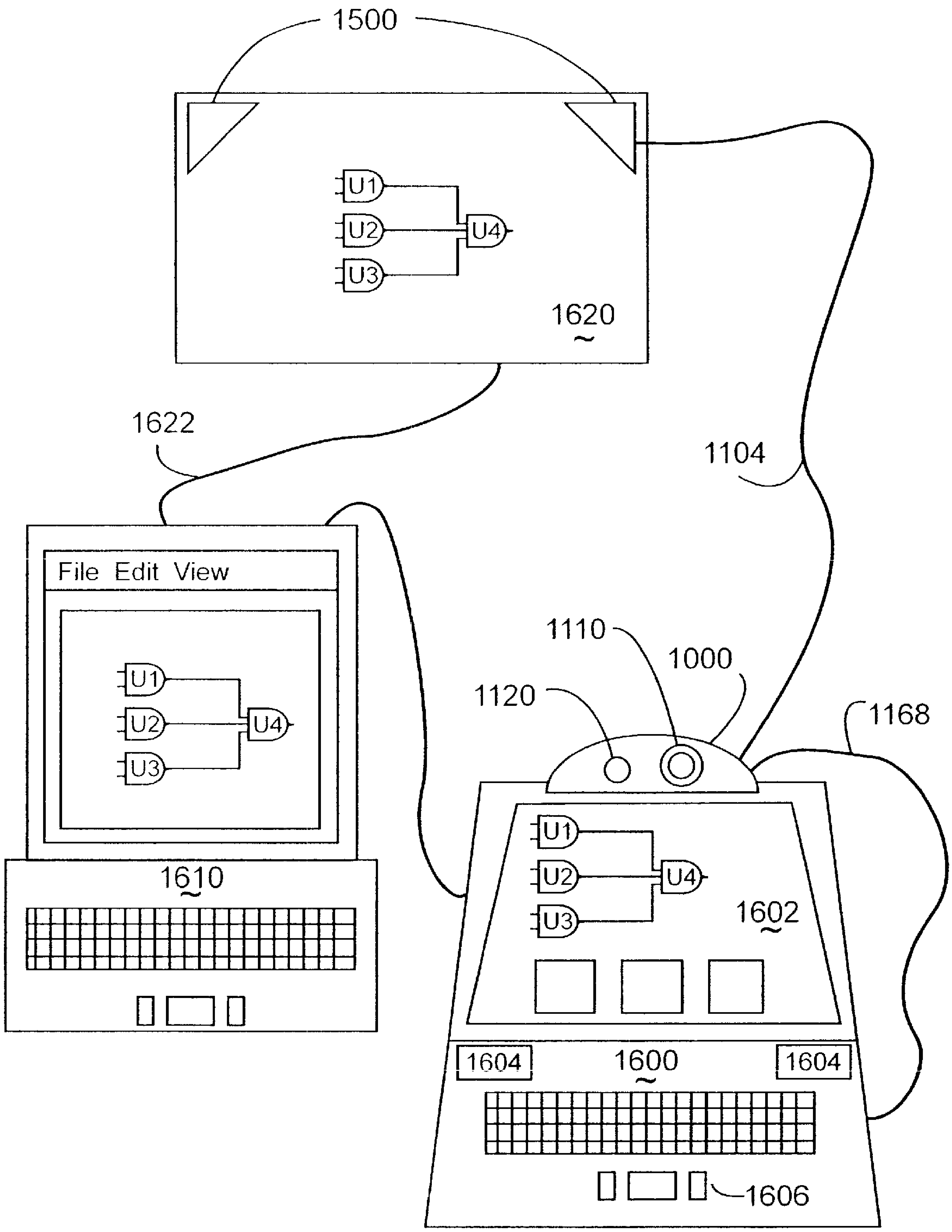
1500
U1
U2
U3
U4
1620
1622
1104
File Edit View
U1
U2
U3
U4
1110
1000
1120
1168
1610
U1
U2
U3
U4
1602
1604
1600
1604
1606

Fig. 16

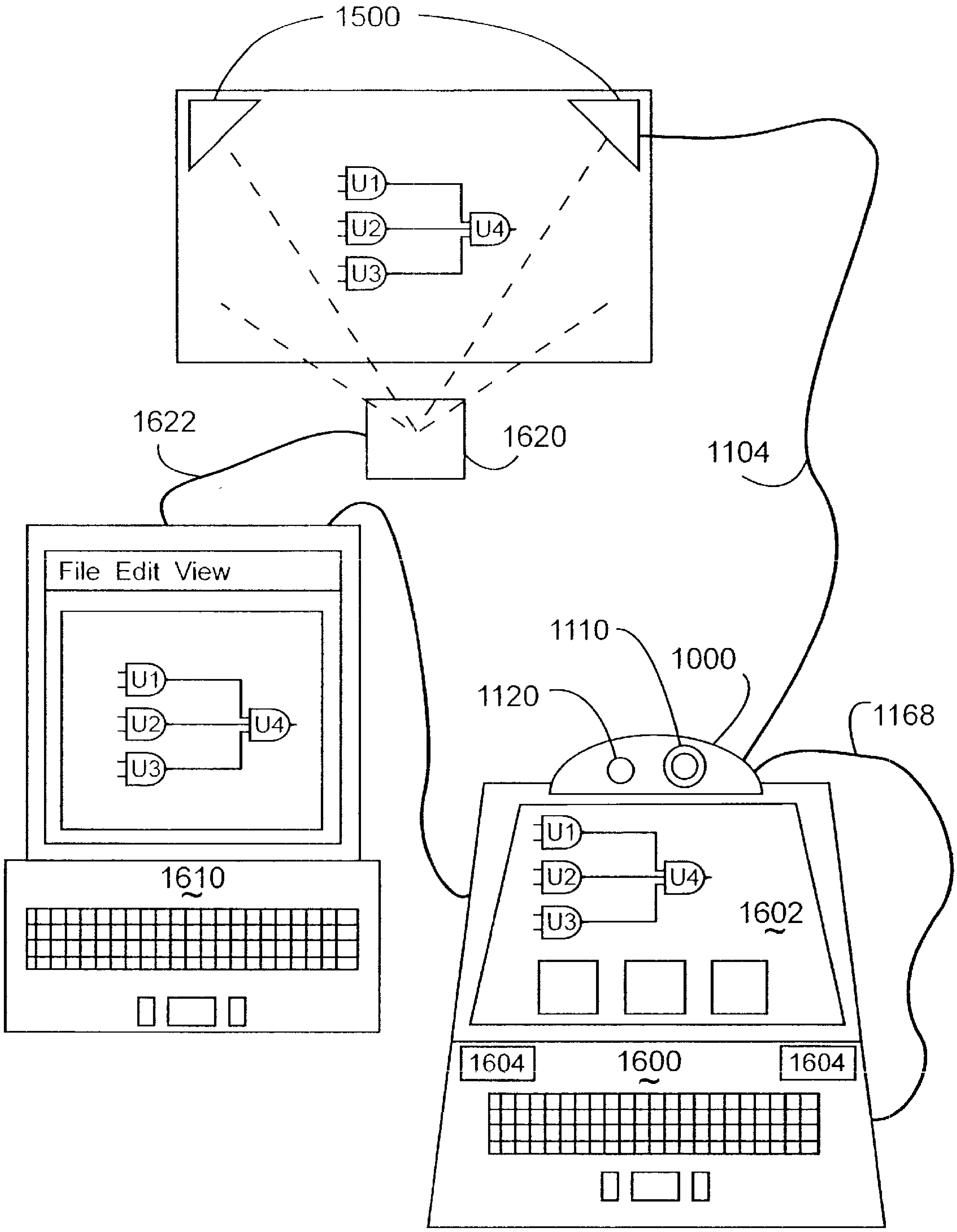
1500
U1
U2
U3
U4
1622
1620
1104
File Edit View
U1
U2
U3
U4
1110
1000
1120
1168
1610
U1
U2
U3
U4
1602
1604
1600
1604

Fig. 17

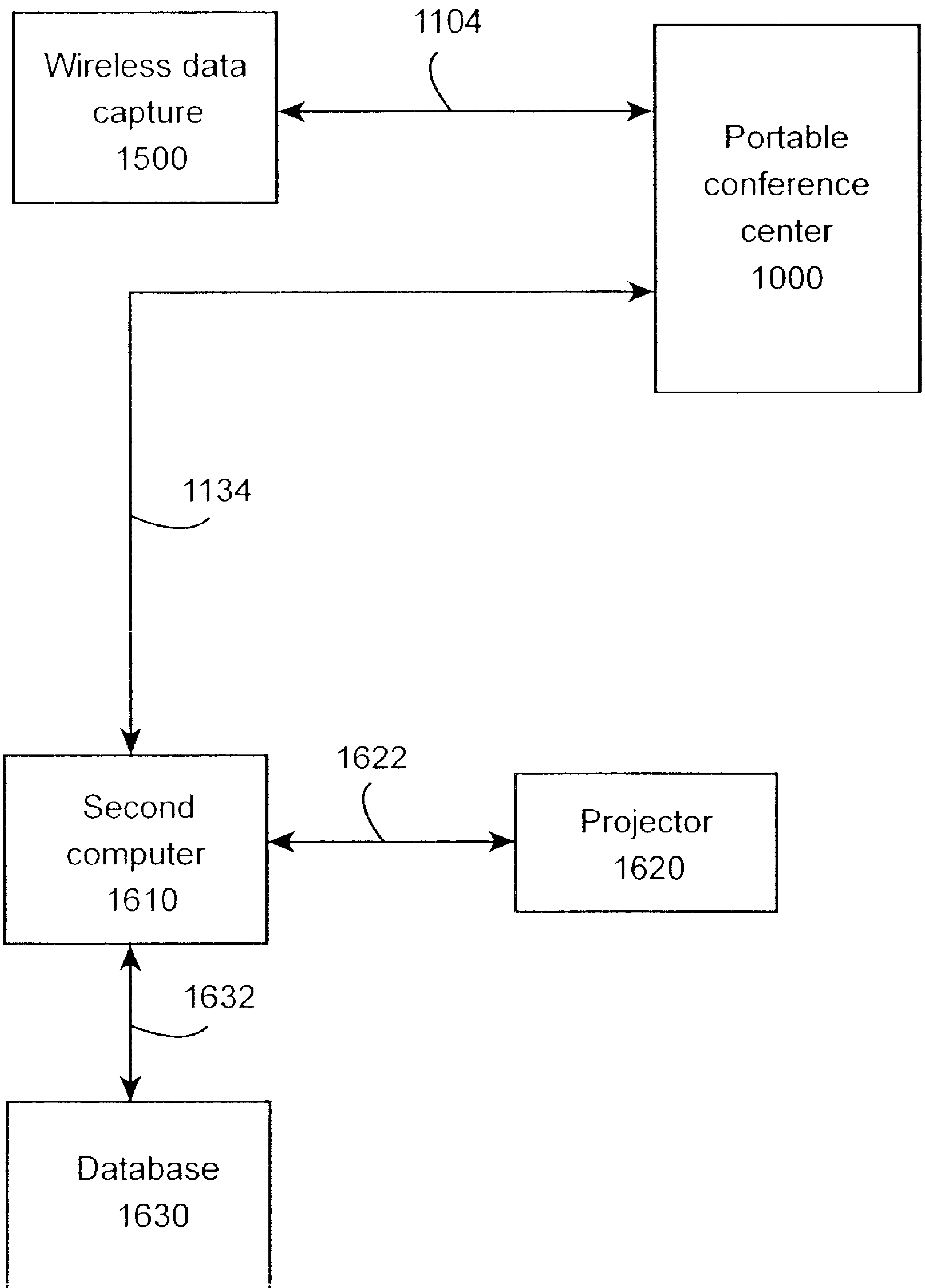
Wireless data capture 1500
1104
Portable conference center 1000
1134
Second computer 1610
1622
Projector 1620
1632
Database 1630

Fig. 18

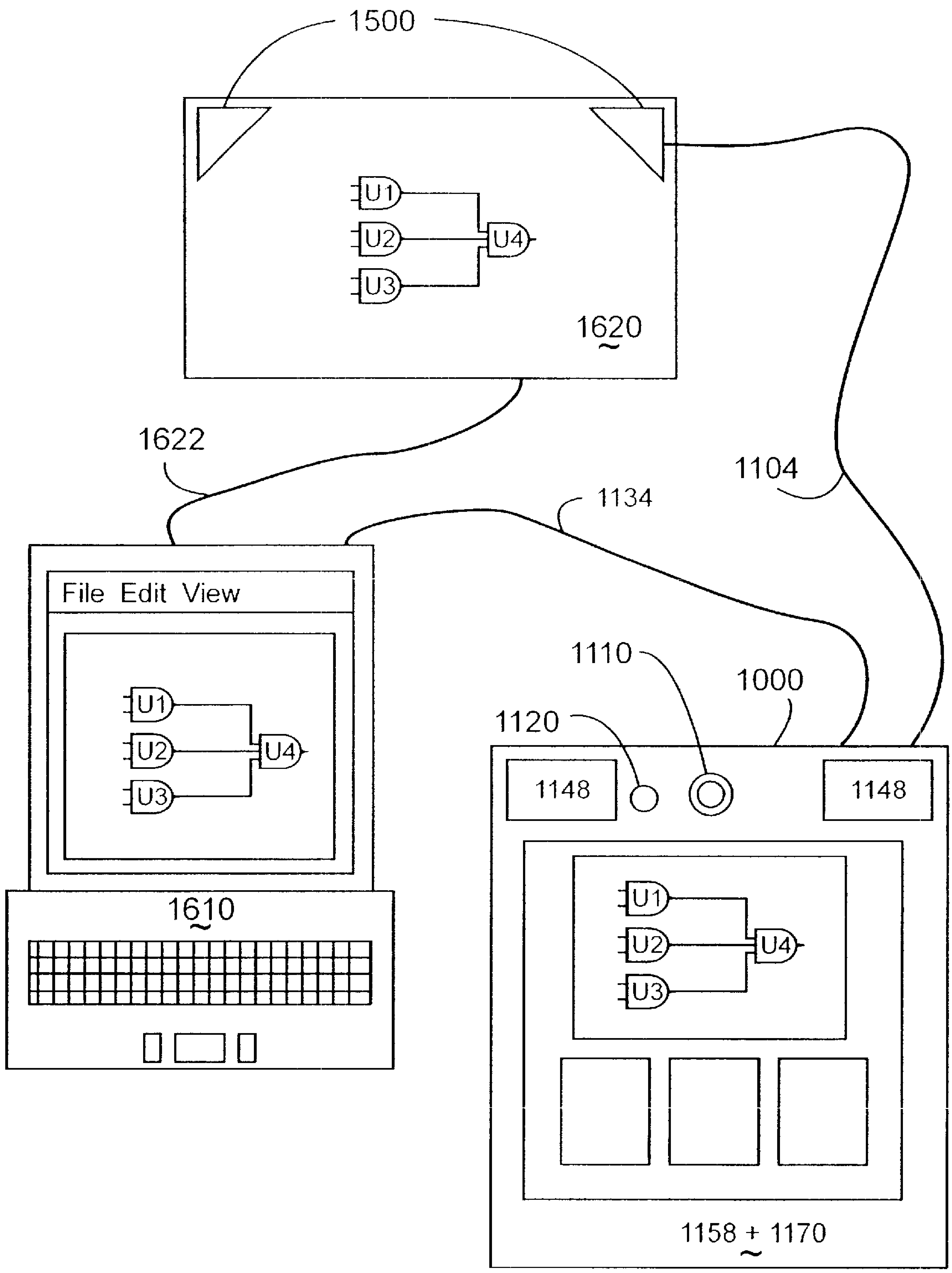
1500
U1
U2
U3
U4
1620
1622
1104
1134
File Edit View
U1
U2
U3
U4
1610
1110
1000
1120
1148
1148
U1
U2
U3
U4
1158 + 1170

Fig. 19

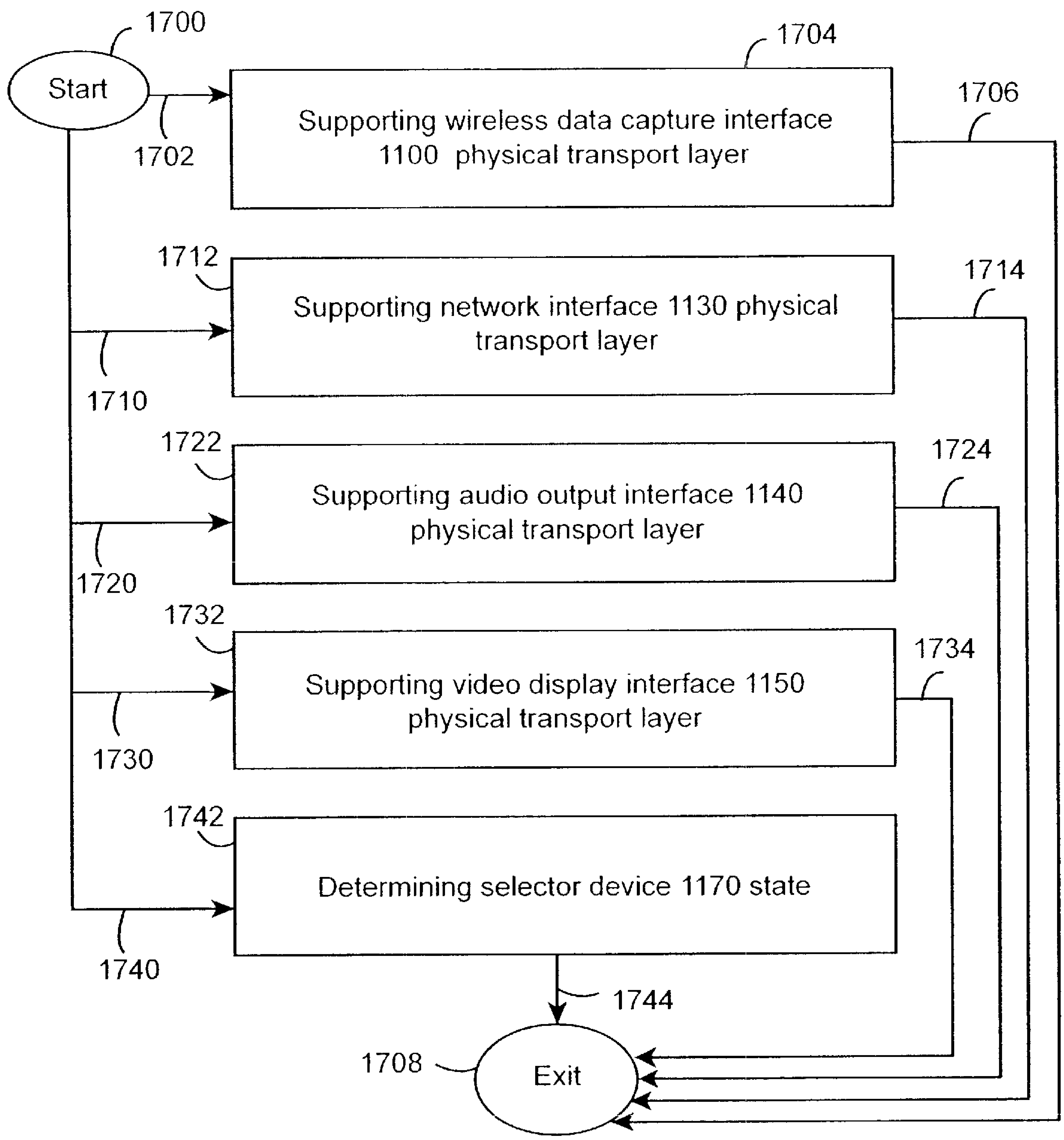
1700
Start
1702
1704
Supporting wireless data capture interface 1100 physical transport layer
1706
1712
Supporting network interface 1130 physical transport layer
1714
1710
1722
Supporting audio output interface 1140 physical transport layer
1724
1720
1732
Supporting video display interface 1150 physical transport layer
1734
1730
1742
Determining selector device 1170 state
1740
1744
1708
Exit

Fig. 20

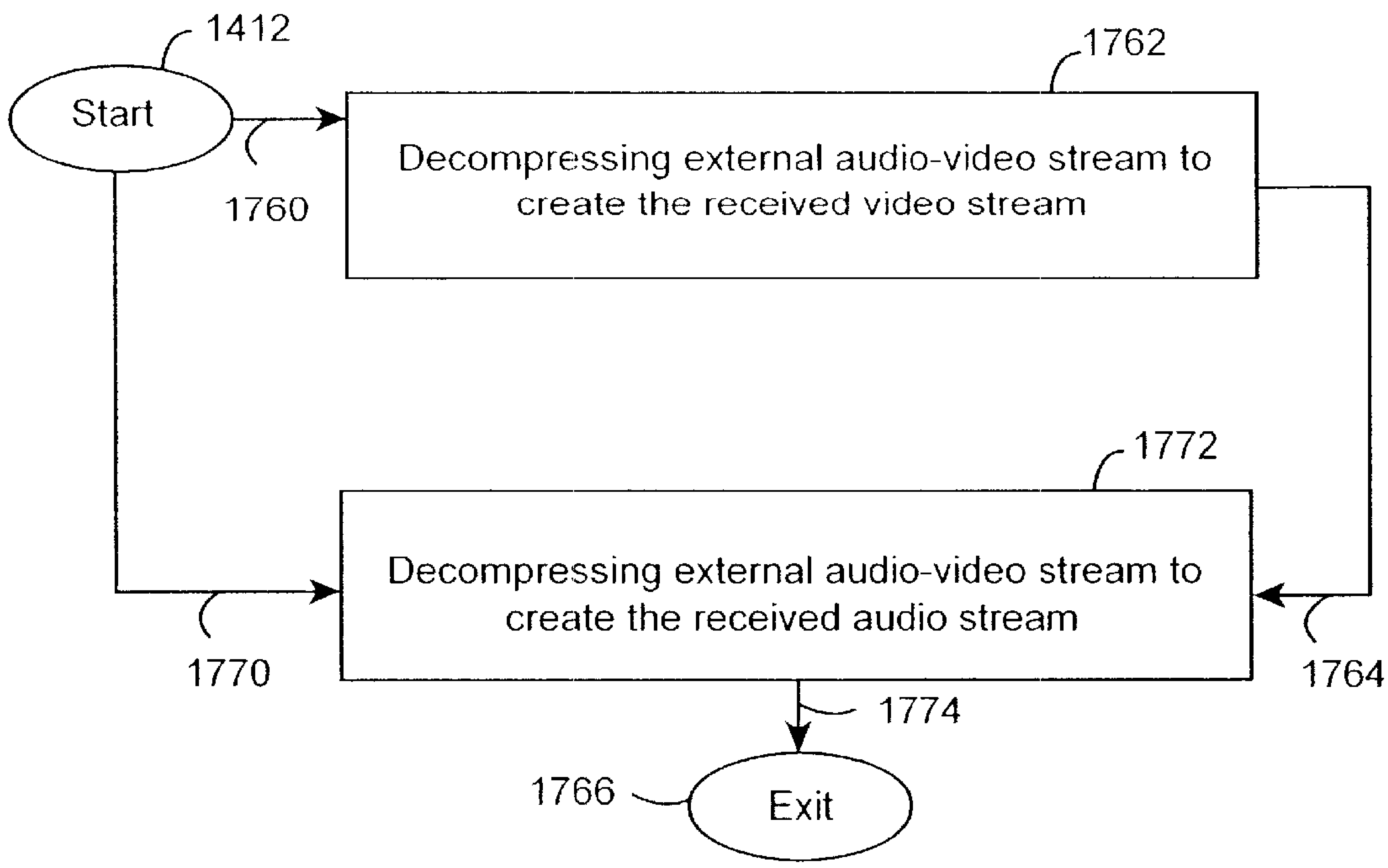
1412
Start
1760
1762
Decompressing external audio-video stream to create the received video stream
1772
Decompressing external audio-video stream to create the received audio stream
1770
1764
1774
1766
Exit

Fig. 21

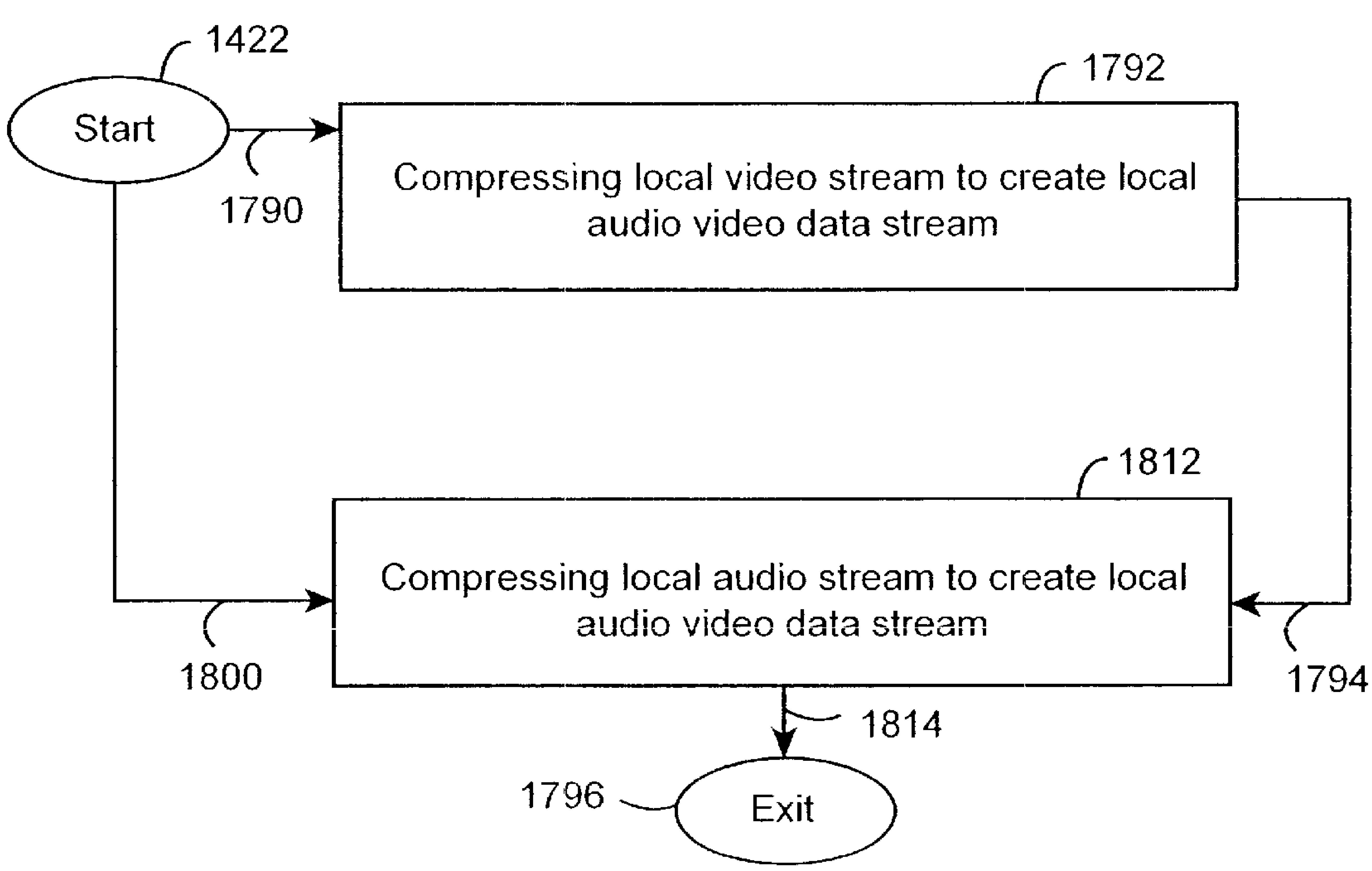
1422
Start
1790
1792
Compressing local video stream to create local audio video data stream
1812
Compressing local audio stream to create local audio video data stream
1800
1794
1814
1796
Exit

Fig. 22

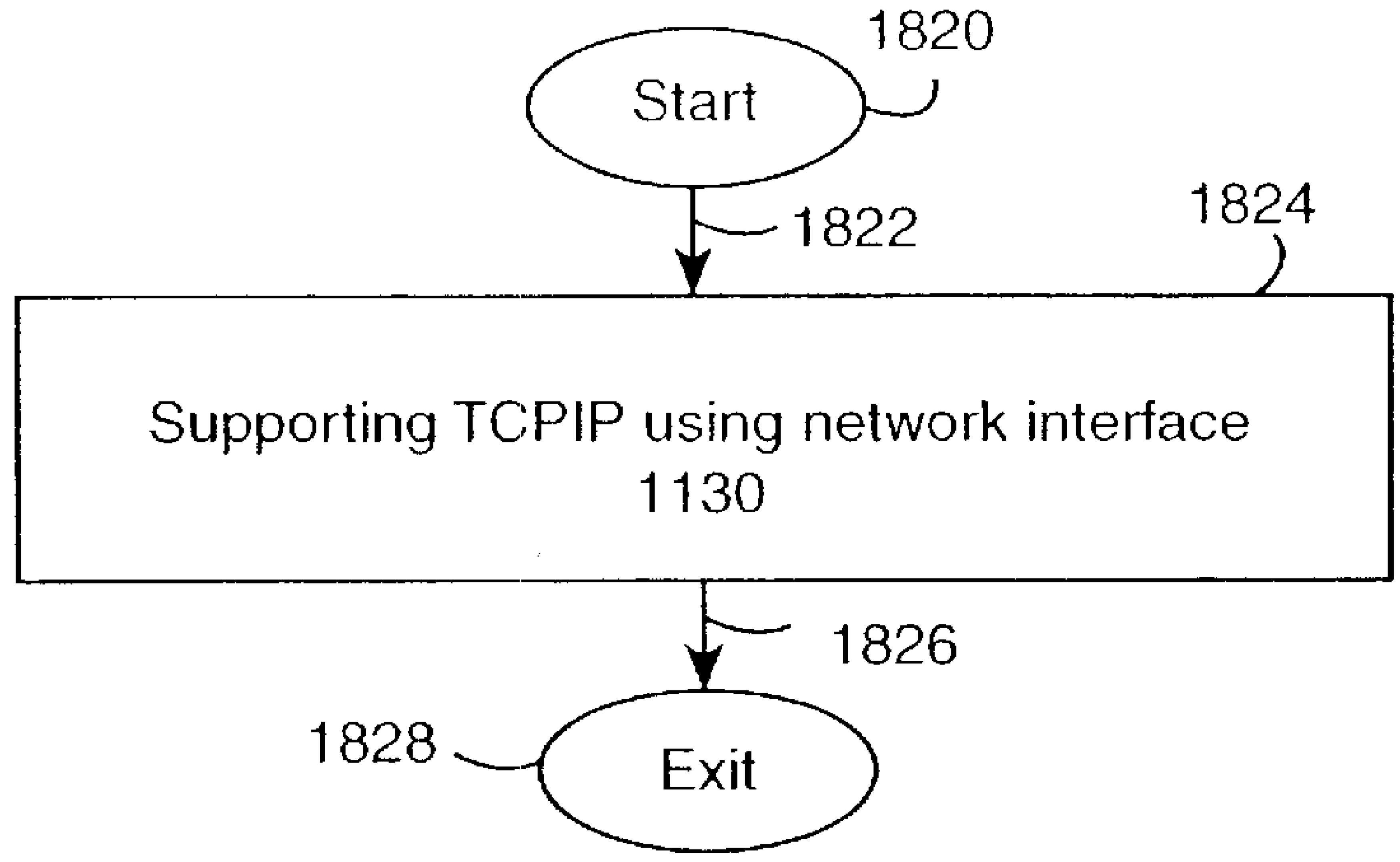
1820
Start
1822
1824
Supporting TCPIP using network interface
1130
1826
1828
Exit

Fig. 23

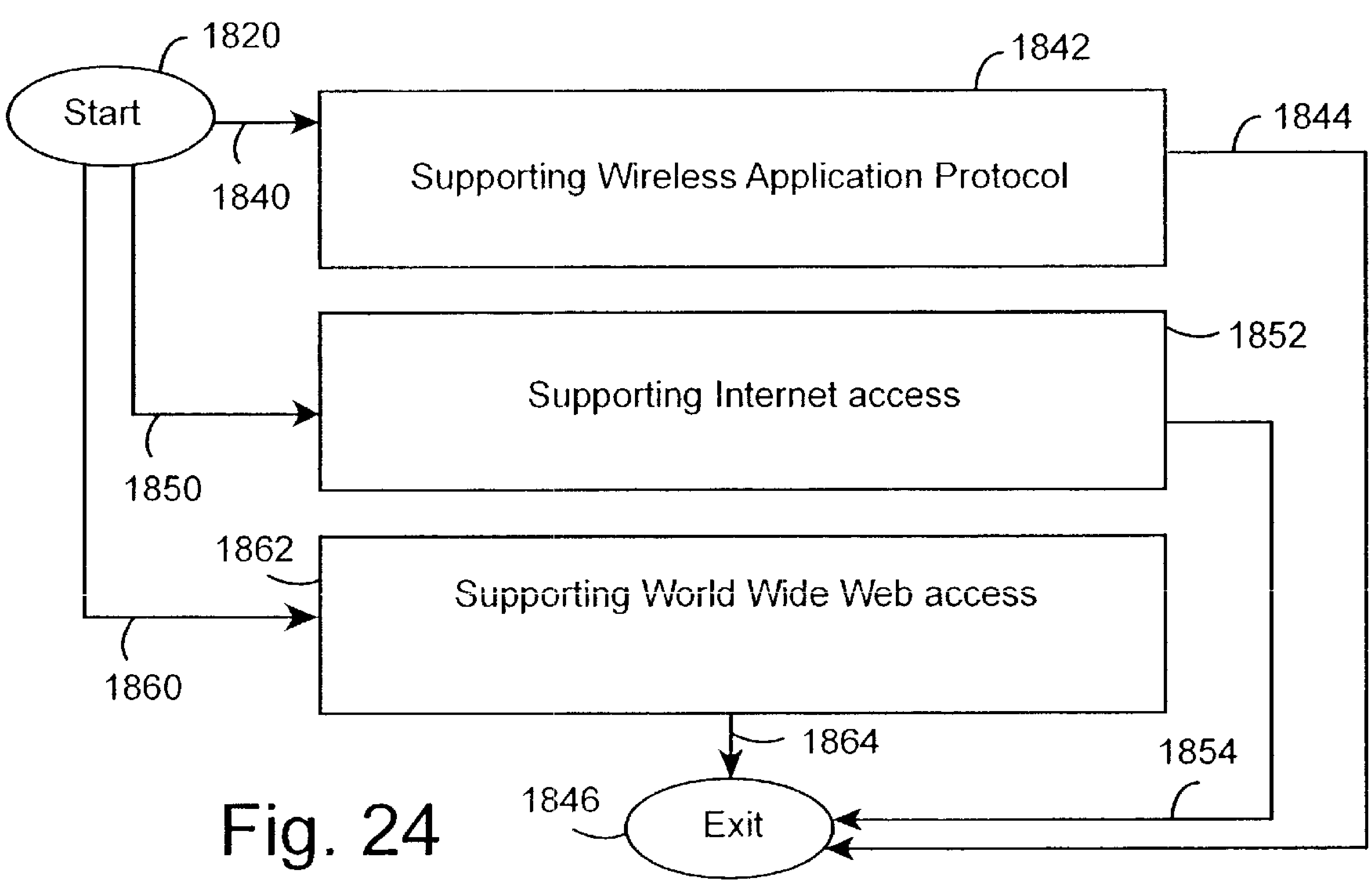
1820
Start
1842
1840
Supporting Wireless Application Protocol
1844
1852
Supporting Internet access
1850
1862
Supporting World Wide Web access
1860
1864
1854
1846
Exit

Fig. 24

# PORTABLE CONFERENCE CENTER

This is a continuation of application Ser. No. 09/428,305, filed Oct. 27, 1999.

## TECHNICAL FIELD

This invention relates to a portable conference center mechanism.

## BACKGROUND ART

The most common form of distributed meeting today is the conference telephone call. Such mechanisms allow people to meet in several distant locations and interact in a real time fashion. There are however some severe limitations with such systems. Most importantly, there is no visual imagery. It is often difficult to keep track of voices and names without being able to see the faces. It is often difficult to understand what is being discussed without access to some visual cues, such as slide presentations and/or whiteboard activities.

Traditional video conferencing systems address some of these limitations. However, traditional video conferencing systems are large, expensive systems, often requiring a dedicated room. Such systems are usually quite complex, with thick instruction manuals, often further requiring trained personnel to maintain and setup for specific conferences.

There are inexpensive video cameras developed interface to a computer and with a microphone interfaced to that computer, can provide limited video conferencing capability. Such systems components have a number of limitations and problems associated with them. First, they are not a complete system solution to the video conferencing requirements. Significant software must be provided to integrate, synchronize and compress the audio and video generated locally with the rest the audio-video streams generated elsewhere. It is questionable whether an unaided computer can actually compress the audio-video stream quickly enough to keep it real time, with high enough visual resolution and audio noise suppression, to provide viable support at the available bandwidth. Often the cameras being used today lack the depth of field and resolution necessary to discern facial expressions of more than one person at a time. What is needed is an inexpensive, self-contained audio-visual support device complete with compression capabilities which can interface to existing computers to support portable audio-video conferencing.

Many business meetings require intensive use of whiteboards or some other writing device, such as flip chart or paper pads. Traditional video conferencing systems do not capture whiteboard contents well. The video conference system camera aimed at a whiteboard encounters a highly reflective surface. It is often difficult, if not impossible, to adjust the contrast and brightness to effectively capture the whiteboard contents within the time constraints of the meeting. While there are some less reflective whiteboards which are made for use with traditional video conferencing cameras, they are expensive and not considered a portable solution.

There are some whiteboard conference solutions able to accurately capture whiteboard activities. Some of these solutions are considered portable, employing technologies such as resistive touch screens. However, such systems are at the limits of what can be considered portable, with a 60 cm by 90 cm whiteboard weighing close to 10 kilograms, and with carrying case, often approaching 15 kilograms.



There is one known flexible, roll-able resistive touch screen whiteboard available. It rolls up into a carrying tube that also carries the collapsible stand that the screen is stretched over during use. It is expensive, with increasing cost as the display area becomes larger. The portability is further negatively impacted as the weight grows with the display area.

There are often situations where a projected window of a computer would be quite useful in a video conference. Such situations include meetings where substantial amounts of detail must be reviewed and possibly modified. Engineering review meetings would often benefit from the ability to project schematics and other technical drawings onto a large display device and then be able to affect such drawings as one would with a standard pointing device, such as a mouse. Such meetings often need to take place in the video conference setting and are today quite cumbersome, lacking a straightforward, portable mechanism for local and distributed presentation and pointing.

Similarly, graphically oriented manipulation of presentations and other material in a marketing, sales, or publication setting is also inhibited by the lack of interactivity with remote participants being unable to manipulate these often large, computer based materials.

What is needed is a truly portable conference center, able to fit into a compartment of a typical portable computer carrying case and provide not only excellent white board capture and transference, but also provide the capturing and transference of both quality audio and video by the portable conference center users.

What is further needed is a truly portable conference center, able to interface with existing whiteboards and computers, requiring the minimum of user interaction to calibrate and setup for a conference session.

What is further needed is a truly portable conference center which provides a uniformity of service ranging from the small location meeting, to distributed meetings within a LAN, to distributed meetings within a WAN, to meetings distributed across them Internet.

What is further needed is a truly portable conference center, able to support a projected computer pointing device.

## DISCLOSURE OF THE INVENTION

Various aspects of this invention address all the above problems, needs and limitations of the prior art.

One aspect of the invention includes a portable video conference module supporting a network-based video conference comprising a processor, a video camera, and audio input device and several interfaces coupled to the processor. The processor includes a local instruction processor accessing a local non-volatile memory. The interfaces include a wireless data capture interface, a video display interface, an audio output interface and a network interface. The portable video conference module weighs less than about 3 KG.

The light weight and flexible interfaces advantageously permit a wide variety of display, projection and audio output equipment to be supported. The built-in video camera and audio input device advantageously provide the two critical input devices optimized for the video conference application. Networks as used herein refer not only to LANs, WANs, and the Internet, but also include any communication scheme involving a network interface. Network interfaces include but are not limited to LAN interfaces and modems.

The local instruction processor executes program code segments residing in the local non-volatile memory. A segment initializes a local audio video data stream of the video conference. Another segment repeatedly receives from the network interface an external audio-video stream to create a received video stream presented to the video display interface and to create a received audio stream presented to the audio output interface. Another segment receives a local video stream from the video camera and a local audio stream from the audio input device and receives the wireless data capture state from the wireless data capture interface to create a local audio video data stream. A segment sends the local audio video data stream to the network interface.

Program code segments may be advantageously implemented as threads in a real-time operating system in a microprocessor or embedded processor acting as the local instruction processor. Program code segments may also be advantageously implemented as event driven concurrent objects.

These program code segments are distinct in activity, structure and requirements from the other program code segments. It is advantageous to minimize user initialization and setup of the local audio video data stream. Organizing a program code segment to create the local audio video data stream and another program code segment to send the local audio video data stream across the network interface is an advantageous partitioning in terms of both creating the local audio video data stream and the transmission of that stream elsewhere. A separate program code segment receiving the external audio-video stream and creating a received audio stream and a received video stream to be presented to the audio output interface and video display interface respectively is also advantageous.

The wireless data capture interface can be coupled to a portable wireless interface supporting accurate real-time capture of writing or erasing from any writing surface, including a whiteboard, easel or paper. The wireless data capture interface supporting capture of writing from existing whiteboards is very advantageous, as this is a major problem in general. It is also advantageous in providing a significant improvement to existing portable electronic whiteboards, which require the use of a separate whiteboard but also require many times the weight to be transported. Portable electronic whiteboards also fail to provide video cameras and optimal microphones supporting the other primary functions of such meetings, which are needed to share the sights and sounds of distant people spontaneously communicating.

A wireless data capture device can also be coupled with computer projection systems to provide a virtual pointing device in such video conference environments. This advantageously allows distant participants to interact with computation objects such as computer aided design databases as well as other databases and documents.

Another embodiment acts as an add-on module coupled to a computer via a module interface. The computer includes a display device and an audio output device. The module interface is used to send the received video stream to the computer display device and to send the received audio stream to the computer audio output device. This advantageously supports a low cost add-on to existing computers, making video conferencing a much more widely available capability. It advantageously makes possible the use of video conferencing by many more people and groups than today. It does not require a dedicated room, lots of space to store, or weigh much when transported.

A further embodiment supports use of an external network interface on the computer to perform the communication of the network interface through the module interface to the computer external network interface. This further advantageously reduces the cost of the portable video conference module whenever someone already owns a computer with an adequate network interface.

Another further embodiment includes a mechanical attachment able to mechanically attach the portable video conference center with module interface to the computer. This advantageously provides a convenient mounting platform for the portable video conference center on the computer.

Another embodiment includes a standard computer interface in the module interface to a computer. Further embodiments include that standard computer interface being a PCMCIA or USB interface. Note that PCMCIA and PCM are two compatible versions of the same standard computer interface.

Standard computer interfaces employed to provide the module interface are advantageous in providing a low cost, well tested mechanism for interfacing the portable video conference center to the computer.

Another embodiment further includes a compression accelerator coupled to the local instruction processor. A further embodiment occurs when the video camera coupled to the local instruction processor further includes the video camera coupled to the compression accelerator. These embodiments advantageously provide increased capability to improve the transmission bandwidth required for a video stream of a given quality level.

Another embodiment further includes video display ram coupled to the video display interface. Another embodiment further includes a decompression accelerator coupled to the local instruction processor. Further embodiments include the coupling of local instruction processor to the video display interface further includes coupling the decompression accelerator to the video display interface. A further embodiment includes the decompression accelerator coupled to video display ram. These embodiments advantageously provide increased capability to improve the reception bandwidth required for a video stream of a given quality.

Another embodiment of the invention further includes a video display coupled to the video display interface. This advantageously permits the video display to be optimized for the task of presenting the video conference. A further embodiment includes a selector device. A further embodiment includes the video display being a flat panel display. A further embodiment includes the selector device including a touch sensitive panel integrated with the video display. These embodiments further advantageously improve the user interface of the invention.

A further embodiment includes the module weighing less than about 2.5 KG. A further embodiment includes the module weighing less than about 2 KG. A further embodiment includes the module weighing less than about 1.5 KG. A further embodiment includes the module weighing less than about 1 KG. A further embodiment includes the module weighing less than about 0.5 KG. Each of these embodiments provides a significant advantage over its predecessor by reducing the total transported weight for a video conference.

Embodiments include the network interface supporting a wireline physical transport layer or a wireless physical transport layer. Another embodiment includes the network interface supporting ATM. ATM network support is a widely used and increasingly common communications technology providing a significant increase in delivered bandwidth to applications such as the portable conference center. Note that versions of ATM are found with both wireless and wireline physical transport layers.

Another embodiment includes the network interface supporting a multi-channel access protocol. Multi-channel access protocols advantageously provide greater optimization of delivered bandwidth in a variety of situations. A further embodiment includes the multi-channel access protocol supporting frequency modulation. Another further embodiment includes the multi-channel access protocol supporting time division. Another further embodiment includes the multi-channel access protocol supporting wavelet mechanisms. Another further embodiment includes the multi-channel access protocol supporting spread spectrum mechanisms. A further embodiment includes the multi-channel access protocol supporting broadband spread spectrum. Another further embodiment includes the multi-channel access protocol supporting DSL. These various multi-access protocols and protocol components provide central tools to optimize the delivery of bandwidth to distributed users of the portable video conference.

Another embodiment includes software using the network interface supporting the TCPIP protocol. Support of the TCPIP protocol opens the door to network access in many systems. A further embodiment includes software using the network interface supporting Internet access. Support of Internet access advantageously supports interacting with the vast majority of networks in the world. A further embodiment includes software supporting the World Wide Web. Support of the World Wide Web is also advantageous in providing a user friendly interface to network access which is well understood by most people likely to use a portable video conference. Another further embodiment includes software using the network interface supporting the Wireless Application Protocol. The Wireless Application Protocol advantageously supports the Internet and World Wide Web delivered in a wireless physical transport layer.

Another embodiment includes the audio output interface supporting a digital protocol. Digital audio protocols do not exhibit signal degradation over long lines. Another embodiment includes the audio output interface supporting an analog protocol. External audio output devices commonly support analog audio protocols. Another embodiment includes an audio output device coupled to the audio output interface. A built-in audio output device is advantageous in reducing the amount of external hardware which must be interfaced to make a video conference.

Another embodiment includes the wireless data capture interface supporting a wireline physical transport layer to couple to a wireless data capture device. Another embodiment includes the wireless data capture interface supporting a wireless physical transport layer to couple to a wireless data capture device. A further embodiment includes the wireless data capture interface wireless physical transport layer interacting in the infrared spectrum. Another further embodiment includes the wireless data capture interface wireless physical transport layer interacting in the radio spectrum. A further embodiment includes the wireless data capture interface wireless physical transport layer employing at least part of the Bluetooth communications protocol. These embodiments advantageously minimize the wiring which users must contend with in setting up a video conference.

These and other advantages of the present invention will become apparent upon reading the following detailed descriptions and studying the various figures of the drawings.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** depicts a system block diagram of an embodiment **1000** in accordance with an aspect of the invention;

FIG. **2** depicts a flowchart of program code segments executed by the local instruction processor **1020** residing in local non-volatile memory **1030** in accordance with an aspect of the invention;

FIG. **3** depicts an application of embodiment **1000** employing a wireless data capture device **1500**, audio output device **1540** and video display **1550**;

FIG. **4** depicts a system block diagram of a further embodiment **1000** of FIG. **1** incorporating a module interface to a computer in accordance with an aspect of the invention;

FIG. **5** depicts an application of further embodiment **1000** of FIG. **4** employing a wireless data capture device **1500** and computer **1600**;

FIG. **6** depicts a system block diagram of a further embodiment **1000** of FIG. **1** incorporating an internal video display **1158** in accordance with an aspect of the invention;

FIG. **7** depicts an application of further embodiment **1000** of FIG. **6** employing a wireless data capture device **1500** and audio output device **1540**;

FIG. **8** depicts a system block diagram of a further embodiment **1000** of FIG. **6** incorporating an internal audio output device **1148** in accordance with an aspect of the invention;

FIG. **9** depicts an application of further embodiment **1000** of FIG. **8** employing a wireless data capture device **1500**;

FIG. **10** depicts a system block diagram of a further embodiment **1000** of FIG. **8** incorporating a selector device in accordance with an aspect of the invention;

FIG. **11** depicts an application of further embodiment **1000** of FIG. **10** using an integrated video display and selector device employing a wireless data capture device **1500**;

FIG. **12** depicts an application of further embodiment **1000** of FIG. **10** using a touch pad selector device employing a wireless data capture device **1500**;

FIG. **13** depicts an application of further embodiment **1000** of FIG. **10** using a touch pad selector device employing a wireless data capture device **1500** and supporting a windowing system which in turn supports a web browser;

FIG. **14** depicts a system block diagram of a further embodiment **1000** of FIGS. **8** and **4** incorporating a selector device effected through the module interface in accordance with an aspect of the invention;

FIG. **15** depicts an application system block diagram of certain embodiments **1000** utilizing a module interface connection **1168** from a first computer **1600** coupled **1612** to a second computer **1610**, which in turn drives **1622** a projector **1620** and accesses **1632** a database **1630** in accordance with an aspect of the invention;

FIG. **16** depicts a system application based upon the application system block diagram of FIG. **15** using a back projector **1620** in accordance with an aspect of the invention;

FIG. **17** depicts a system application based upon the application system block diagram of FIG. **15** using a front projector **1620** in accordance with an aspect of the invention;

FIG. **18** depicts an application system block diagram of certain embodiments **1000** utilizing the network interface coupled **1134** to a second computer **1610**, which in turn drives **1622** a projector **1620** and accesses **1632** a database **1630** in accordance with an aspect of the invention;

FIG. **19** depicts a system application based upon the application system block diagram of FIG. **18** using a back projector **1620** in accordance with an aspect of the invention;

FIG. **20** depicts a flowchart of several program code segments supporting the physical transport layers of the interfaces of the portable conference center in accordance with aspects of the invention;

FIG. **21** depicts a detail flowchart of operation **1412** supporting decompression of an external audio-video stream in accordance with some aspects of the invention;

FIG. **22** depicts a detail flowchart of operation **1422** supporting compression of the local audio and local video streams in accordance with some aspects of the invention;

FIG. **23** depicts a flowchart showing supporting for TCPIP protocols across the network interface **1160** in accordance with an aspect of the invention; and

FIG. **24** depicts a detail flowchart of operation **1824** supporting one or more of Wireless Application Protocol, Internet access and access to the World Wide Web.

## DETAILED DESCRIPTION OF THE INVENTION

FIG. **1** depicts a system block diagram of an embodiment **1000** of a portable conference center in accordance with an aspect of the invention. Portable conference center **1000** includes a processor **1010**. Processor **1010** is coupled **1102** with wireless data capture interface **1100**. Processor **1010** is coupled **1112** with video camera **1110**. Processor **1010** is coupled **1122** with audio input device **1120**. Processor **1010** is coupled **1132** with network interface **1130**. Processor **1010** is coupled **1142** with audio output interface **1140**. Processor **1010** is coupled **1152** with video display interface **1150**.

Processor **1010** includes local instruction processor **1020** accessing **1032** local non-volatile memory **1030** to execute program code segments. Local instruction processor **1020** is coupled **1102** with wireless data capture interface **1100**. Local instruction processor **1020** is coupled **1112** with video camera **1110**. Local instruction processor **1020** is coupled **1122** with audio input device **1120**. Local instruction processor **1020** is coupled **1132** with network interface **1130**. Local instruction processor **1020** is coupled **1142** with audio output interface **1140**. Local instruction processor **1020** is coupled **1152** with video display interface **1150**.

In certain embodiments, processor **1010** is packaged as a module. In certain further embodiments, processor **1010** is packaged on a printed circuit board. In certain further embodiments, processor **1010** is packaged as a PCMCIA card. In certain other further embodiments, processor **1010** is packaged as a n integrated circuit.

In certain embodiments, local instruction processor **1020** includes but is not limited to a microprocessor. In certain embodiments, local instruction processor **1020** includes but is not limited to an embedded processor. In certain embodiments, local instruction processor **1020** includes but is not limited to a programmable finite state machine. Programmable finite state machines include but are not limited to field programmable logic devices, field programmable gate arrays and table driven finite state machines. In certain embodiments, local instruction processor **1020** includes but is not limited to bit slice engines. In certain embodiments, local instruction processor **1020** includes but is not limited to byte code engines. In certain embodiments, local instruction processor **1020** includes but is not limited to application specific components. Application specific components as used herein include but are not limited to digital processor cores, signal processors, image processors, image compression accelerators and image decompression accelerators.

Image circuitry as used herein refers to either or both still image circuitry and motion image circuitry. Image circuitry implements imaging algorithms. Imaging algorithms include but are not limited to Fourier based algorithms, wavelet based algorithms and fractal based algorithms. Fourier based algorithms include but are not limited to components of JPEG, MPEG1, MPEG2 and MPEG4. Wavelet algorithms include but are not limited to components of MPEG4. Fractal based algorithms include but are not limited to algorithms based on iterated function systems.

In certain embodiments, local instruction processor **1020** includes but is not limited to local ram. In certain further embodiments, local instruction processor **1020** includes but is not limited to a local cache ram. In certain embodiments, local instruction processor **1020** includes but is not limited to ram specifically for data access. In certain embodiments, local instruction processor **1020** includes but is not limited to ram specifically for instruction access. In certain embodiments, local instruction processor **1020** includes but is not limited to specific, distinct ram configurations for data access and instruction access.

As used herein various embodiments of processor **1010** include but are not limited to SISD architectures, SIMD architectures, MISD architectures, MIMD architectures and combinations of these architectures.

In certain embodiments, local nonvolatile memory **1030** includes but is not limited to arrays of one or more semiconductor memory devices. In certain embodiments, local nonvolatile memory **1030** includes but is not limited to nonvolatile memory configured as a file management system.

In certain embodiments, local nonvolatile memory **1030** includes but is not limited to a detachable component of processor **1010**. In certain further embodiments, local nonvolatile memory **1030** includes but is not limited to a removable package. In certain further embodiments, local nonvolatile memory **1030** includes but is not limited to a PCMCIA card. In certain further embodiments, local nonvolatile memory **1030** includes but is not limited to a Compact Flash™ card.

In certain embodiments, wireless data capture interface **1100** supports a wireline physical transport layer. In certain further embodiments, wireless data capture interface **1100** the supported wireline physical transport layer includes a fiber optic component. In further embodiments, wireless data capture interface **1100** the supported wireline physical transport layer includes a twisted pair component. In further embodiments, wireless data capture interface **1100** the supported wireline physical transport layer includes a standardized bus component.

In certain embodiments, wireless data capture interface **1100** supports a wireless physical transport layer. In certain further embodiments, wireless data capture interface **1100** the supported wireless physical transport layer interacts in the infra-red spectrum. In other further embodiments, wireless data capture interface **1100** the supported wireless physical transport layer interacts in the radio spectrum. In certain further embodiments, wireless data capture interface

1100 the supported wireless physical transport layer interacts in the radio spectrum supporting at least part of the Bluetooth standard.

In certain embodiments, video camera **1110** includes a CCD array. In certain embodiments, video camera **1110** includes an adjustable lens or lens assembly. In certain further embodiments, the lens assembly may be controlled via video camera coupling **1112** by local instruction processor **1020**.

In certain embodiments, audio input device **1120** includes a single microphone. In certain embodiments, audio input device **1120** includes multiple microphones. In certain embodiments, audio input device **1120** includes an amplifier coupled to each microphone. In certain embodiments, audio input device **1120** includes an A/D circuit input channel coupled to each microphone. In certain embodiments, audio input device **1120** includes each microphone coupled to an amplifier, which couples to an A/D circuit input channel.

In certain embodiments, network interface **1130** supports a wireline physical transport layer. In certain further embodiments, network interface **1130** the supported wireline physical transport layer includes a fiber optic component. In further embodiments, network interface **1130** the supported wireline physical transport layer includes a twisted pair component. In other further embodiments, network interface **1130** the supported wireline physical transport layer includes a coaxial cable component.

In certain embodiments, network interface **1130** supports a wireless physical transport layer. In certain further embodiments, network interface **1130** the supported wireless physical transport layer interacts in the infra-red spectrum. In other further embodiments, network interface **1130** the supported wireless physical transport layer interacts in the radio spectrum. In further embodiments, network interface **1130** the supported wireless physical transport layer interacts in the microwave spectrum.

In certain embodiments, network interface **1130** support includes but is not limited to frequency modulation. In certain embodiments, network interface **1130** support includes but is not limited to time domain multiplexing. In certain embodiments, network interface **1130** support includes but is not limited to FDMA. In certain embodiments, network interface **1130** support includes but is not limited to TDMA. In certain embodiments, network interface **1130** support includes but is not limited to wavelet mechanisms. In certain embodiments, network interface **1130** support includes but is not limited to DSL mechanisms. In certain further embodiments, network interface **1130** support includes but is not limited to ADSL mechanisms. In certain embodiments, network interface **1130** support includes but is not limited to ATM compatible mechanisms.

In certain embodiments, network interface **1130** support includes but is not limited to spread spectrum mechanisms. In certain further embodiments, network interface **1130** support includes but is not limited to frequency hopping. In certain further embodiments, network interface **1130** support includes but is not limited to time hopping. In certain further embodiments, network interface **1130** support includes but is not limited to direct sequence or CDMA. In certain further embodiments, network interface **1130** support includes but is not limited to broadband spread spectrum. In further embodiments, network interface **1130** support includes but is not limited to wide band-CDMA.

In certain embodiments, one or more of couplings **1102**, **1112**, **1122**, **1132**, **1142** and **1152** may be implemented as computer buses or transactions upon one or more computer busses. In certain embodiments, network interface **1130** coupling **1132** includes a standard computer bus. In certain further embodiments, network interface coupling **1132** is at least partially compliant with the standardized bus. In other further embodiments, network interface coupling **1132** is the PCMCIA bus and network interface **1130** is a PCMCIA bus card.

In certain embodiments, program code segments executed by the local instruction processor **1020** and residing in local nonvolatile memory **1030** include but are not limited to program code segments supporting the TCPIP protocol via the network interface **1130**. In certain further embodiments, program code segments executed by the local instruction processor **1020** and residing in local nonvolatile memory **1030** include but are not limited to program code segments supporting the Wireless Application Protocol via the network interface **1130**. In certain further embodiments, program code segments executed by the local instruction processor **1020** and residing in local nonvolatile memory **1030** include but are not limited to program code segments supporting Internet access via the network interface **1130**. In certain further embodiments, program code segments executed by the local instruction processor **1020** and residing in local nonvolatile memory **1030** include but are not limited to program code segments supporting accessing the World Wide Web via the network interface **1130**.

In certain embodiments, audio output interface **1140** supports an analog output protocol. In certain further embodiments, audio output interface **1140** includes an output amplifier. In other further embodiments, audio output interface **1140** supports multiple analog audio outputs. In other further embodiments, audio output interface **1140** supports a single analog output.

In certain embodiments, audio output interface **1140** supports a digital output protocol. In certain further embodiments, audio output interface **1140** supports at least part of the MP3 protocol. In certain further embodiments, audio output interface **1140** supports at least part of the AC3 protocol.

In certain embodiments, video display interface support **1150** includes but is not limited to an analog protocol. In certain further embodiments, video display interface **1150** support includes but is not limited to NTSC. In other further embodiments, video display interface **1150** support includes but is not limited to PAL.

In certain embodiments, video display interface **1150** support includes but is not limited to HDTV. In certain embodiments, video display interface **1150** support includes but is not limited to flat panel display protocols. In certain embodiments, video display interface **1150** support includes but is not limited to digital protocols. In certain embodiments, video display interface **1150** support includes but is not limited to RGB.

FIG. **2** depicts a flowchart of program code segments executed by the local instruction processor **1020** residing in local non-volatile memory **1030** in accordance with an aspect of the invention.

Operation **1400** starts the operations of this flowchart. Arrow **1402** directs the flow of execution from operation **1400** to operation **1404**. Operation **1404** performs initializing a local audio video data stream of the video conference. Arrow **1406** directs execution from operation **1404** to operation **1408**. Operation **1408** terminates the operations of this flowchart.

Arrow **1410** directs the flow of execution from starting operation **1400** to operation **1412**. Operation **1412** performs receiving from the network interface **1130** an external audio-video stream to create a received video stream presented to the video display interface **1150** and to create a received audio stream presented to the audio output interface **1140**. Arrow **1414** directs execution from operation **1412** to operation **1408**. Operation **1408** terminates the operations of this flowchart.

Arrow **1420** directs the flow of execution from starting operation **1400** to operation **1422**. Operation **1422** performs receiving a local video stream from video camera **1110**, receiving a local audio stream from the audio input device **1120** and receiving a wireless data capture state from wireless data capture interface **1100** to create the local audio video data stream. Arrow **1424** directs execution from operation **1422** to operation **1408**. Operation **1408** terminates the operations of this flowchart.

Arrow **1430** directs the flow of execution from starting operation **1400** to operation **1432**. Operation **1432** performs sending the local audio video data stream to network interface **1130**. Arrow **1434** directs execution from operation **1432** to operation **1408**. Operation **1408** terminates the operations of this flowchart.

FIG. **3** depicts an application of portable conference center embodiment **1000** employing a wireless data capture device **1500**, audio output device **1540** and video display **1550**.

Portable conference center **1000** wireless data capture interface **1100** of FIG. **1** is coupled **1104** to wireless data capture device **1500**. Wireless data capture device **1500** is situated proximate to a white board **1502** in certain embodiments. Wireless data capture device **1500** is situated proximate to a back projection system **1502** in certain embodiments. Wireless data capture device **1500** is situated proximate to a flat panel display **1502** in certain embodiments.

In certain embodiments, wireless data capture coupling **1104** supports a wireline physical transport layer. In certain further embodiments, wireless data capture coupling **1104** physical transport layer includes a fiber optic component. In further embodiments, wireless data capture coupling **1104** physical transport layer includes a twisted pair component. In further embodiments, wireless data capture coupling **1104** physical transport layer includes a standardized bus component.

In certain embodiments, wireless data capture coupling **1104** supports a wireless physical transport layer. In certain further embodiments, wireless data capture coupling **1104** physical transport layer interacts in the infra-red spectrum. In other further embodiments, wireless data capture coupling **1104** physical transport layer interacts in the radio spectrum. In certain further embodiments, wireless data capture coupling **1104** physical transport layer interacts in the radio spectrum supporting at least part of the Bluetooth standard.

The network interface **1130** is coupled **1034** to an external network. In certain embodiments, network coupling **1134** supports a wireline physical transport layer. In certain further embodiments, the network coupling **1134** physical transport layer includes a fiber optic component. In further embodiments, the network coupling **1134** physical transport layer includes a twisted pair component. In other further embodiments, the network coupling **1134** physical transport layer includes a coaxial cable component.

In certain embodiments, network coupling **1134** supports a wireless physical transport layer. In certain further embodiments, the network coupling **1134** physical transport layer interacts in the infra-red spectrum. In other further embodiments, the network coupling **1134** physical transport layer interacts in the radio spectrum. In certain further embodiments, the network coupling **1134** radio spectrum physical transport layer interacts in the microwave spectrum.

In certain embodiments, network interface **1130** coupling **1132** includes a standard computer bus. In certain further embodiments, network interface coupling **1132** is at least partially compliant with the standardized bus. In other further embodiments, network interface coupling **1132** is the PCMCIA bus and network interface **1130** is a PCMCIA bus card.

Portable conference center **1000** audio output interface **1140** of FIG. **1** is coupled **1144** to an external audio output device **1540**. In certain embodiments, audio output coupling **1144** supports an analog output protocol. In certain further embodiments, audio output interface **1140** includes an output amplifier. In other further embodiments, audio output coupling **1144** supports multiple analog audio outputs. In other further embodiments, audio output coupling **1144** supports a single analog output.

In certain embodiments, audio output coupling **1144** supports a digital output protocol. In certain further embodiments, audio output coupling **1144** supports at least part of the MP3 protocol. In certain further embodiments, audio output coupling **1144** supports at least part of the AC3 protocol.

Portable conference center **1000** video display interface **1150** is coupled **1154** to video display **1550**. In certain embodiments, video display coupling support **1154** includes but is not limited to an analog protocol. In certain further embodiments, video display coupling **1154** support includes but is not limited to NTSC. In other further embodiments, video display coupling **1154** support includes but is not limited to PAL.

In certain embodiments, video display coupling **1154** support includes but is not limited to HDTV. In certain embodiments, video display coupling **1154** support includes but is not limited to flat panel display protocols. In certain embodiments, video display coupling **1154** support includes but is not limited to digital protocols. In certain embodiments, video display coupling **1154** support includes but is not limited to RGB.

FIG. **4** depicts a system block diagram of a further embodiment **1000** of FIG. **1** incorporating a module interface to a computer in accordance with an aspect of the invention.

As in FIG. **1**, portable conference center **1000** includes a processor **1010**. Processor **1010** is coupled **1102** with wireless data capture interface **1100**. Processor **1010** is coupled **1112** with video camera **1110**. Processor **1010** is coupled **1122** with audio input device **1120**. Processor **1010** is coupled **1132** with network interface **1130**. Processor **1010** is coupled **1142** with audio output interface **1140**. Processor **1010** is coupled **1152** with video display interface **1150**.

As in FIG. **1**, processor **1010** includes local instruction processor **1020** accessing **1032** local non-volatile memory **1030** to execute program code segments. Local instruction processor **1020** is coupled **1102** with wireless data capture interface **1100**. Local instruction processor **1020** is coupled **1112** with video camera **1110**. Local instruction processor **1020** is coupled **1122** with audio input device **1120**. Local instruction processor **1020** is coupled **1132** with network interface **1130**. Local instruction processor **1020** is coupled **1142** with audio output interface **1140**. Local instruction processor **1020** is coupled **1152** with video display interface **1150**.

In distinction with FIG. **1**, portable conference center **1000** includes a module interface **1160**, coupled to at least one of the following interfaces. Network interface **1130** couples **1162** to module interface **1160**. Audio output interface **1140** couples **1164** to module interface **1160**. Video display interface **1150** coupled **1166** to module interface **1160**. For the sake of simplicity the following discussion will assume all three interfaces are coupled but all combinations of couplings of these three interfaces are considered within the intended scope of the invention.

In certain embodiments, module interface **1160** supports a computer bus. In certain further embodiments, module interface **1160** supports a live insertion and removal computer bus. In certain further embodiments, module interface supports at least part of the PCMCIA standard.

In certain embodiments, network interface **1130** couples **1162** as an addressable entity on the module interface **1160**. In certain embodiments, audio output interface **1140** couples **1164** as an addressable entity on the module interface **1160**. In certain embodiments, video display interface **1150** couples **1166** as an addressable entity on the module interface **1160**.

In certain embodiments, module interface **1160** supports a wireline physical transport layer. In certain further embodiments, module interface. **1160** physical transport layer support includes fiber optic cable. In further embodiments, module interface **1160** physical transport layer support includes fiber channel. In other further embodiments, module interface **1160** physical transport layer support includes coaxial cable. In other further embodiments, module interface **1160** physical transport layer support includes multi-wire cabling. In other further embodiments, module interface **1160** physical transport layer support includes ATM protocols.

FIG. **5** depicts an application of further embodiment **1000** of FIG. **4** employing a wireless data capture device **1500** and computer **1600**.

Portable conference center **1000** wireless data capture interface **1100** is coupled **1104** to wireless data capture device **1500**. Wireless data capture device **1500** is situated proximate to a white board **1502** in certain embodiments. Wireless data capture device **1500** is situated proximate to a back projection system **1502** in certain embodiments. Wireless data capture device **1500** is situated proximate to a flat panel display **1502** in certain embodiments.

Portable conference center **1000** module interface **1160** of FIG. **4** couples **1168** to computer **1600**. Computer **1600** includes a computer display device **1602**, computer audio output devices **1604**. Portable conference center **1000** video display interface **1150** traverses module coupling **1168** to drive at least part of the computer display **1602**. Portable conference center **1000** audio output interface **1150** traverses module coupling **1168** to drive at least part of the audio output devices **1604**.

FIG. **6** depicts a system block diagram of a further embodiment **1000** of FIG. **1** incorporating an internal video display **1158** in accordance with an aspect of the invention.

As in FIG. **1**, portable conference center **1000** includes a processor **1010**. Processor **1010** is coupled **1102** with wireless data capture interface **1100**. Processor **1010** is coupled **1112** with video camera **1110**. Processor **1010** is coupled **1122** with audio input device **1120**. Processor **1010** is coupled **1132** with network interface **1130**. Processor **1010** is coupled **1142** with audio output interface **1140**. Processor **1010** is coupled **1152** with video display interface **1150**.

As in FIG. **1**, processor **1010** includes local instruction processor **1020** accessing **1032** local non-volatile memory **1030** to execute program code segments. Local instruction processor **1020** is coupled **1102** with wireless data capture interface **1100**. Local instruction processor **1020** is coupled **1112** with video camera **1110**. Local instruction processor **1020** is coupled **1122** with audio input device **1120**. Local instruction processor **1020** is coupled **1132** with network interface **1130**. Local instruction processor **1020** is coupled **1142** with audio output interface **1140**. Local instruction processor **1020** is coupled **1152** with video display interface **1150**.

In distinction with FIG. **1**, portable conference center **1000** includes video display **1158** coupled **1156** to video display interface **1150**. In certain embodiments, video display **1158** includes a flat panel display.

FIG. **7** depicts an application of further embodiment **1000** of FIG. **6** employing a wireless data capture device **1500** and audio output device **1540**.

Portable conference center **1000** wireless data capture interface **1100** of FIG. **1** is coupled **1104** to wireless data capture device **1500**. Wireless data capture device **1500** is situated proximate to a white board **1502** in certain embodiments. Wireless data capture device **1500** is situated proximate to a back projection system **1502** in certain embodiments. Wireless data capture device **1500** is situated proximate to a flat panel display **1502** in certain embodiments.

In certain embodiments, wireless data capture coupling **1104** supports a wireline physical transport layer. In certain further embodiments, wireless data capture coupling **1104** physical transport layer includes a fiber optic component. In further embodiments, wireless data capture coupling **1104** physical transport layer includes a twisted pair component. In further embodiments, wireless data capture coupling **1104** physical transport layer includes a standardized bus component.

In certain embodiments, wireless data capture coupling **1104** supports a wireless physical transport layer. In certain further embodiments, wireless data capture coupling **1104** physical transport layer interacts in the infra-red spectrum. In other further embodiments, wireless data capture coupling **1104** physical transport layer interacts in the radio spectrum. In certain further embodiments, wireless data capture coupling **1104** physical transport layer interacts in the radio spectrum supporting at least part of the Bluetooth standard.

The network interface **1130** is coupled **1034** to an external network. In certain embodiments, network coupling **1134** supports a wireline physical transport layer. In certain further embodiments, the network coupling **1134** physical transport layer includes a fiber optic component. In further embodiments, the network coupling **1134** physical transport layer includes a twisted pair component. In other further embodiments, the network coupling **1134** physical transport layer includes a coaxial cable component.

In certain embodiments, network coupling **1134** supports a wireless physical transport layer. In certain further embodiments, the network coupling **1134** physical transport layer interacts in the infra-red spectrum. In other further embodiments, the network coupling **1134** physical transport layer interacts in the radio spectrum. In further embodiments, the network coupling **1134** radio spectrum physical transport layer interacts in the microwave spectrum.

Portable conference center **1000** audio output interface **1140** of FIG. **1** is coupled **1144** to an external audio output device **1540**. In certain embodiments, audio output coupling

1144 supports an analog output protocol. In certain further embodiments, audio output coupling **1144** includes an output amplifier. In other further embodiments, audio output coupling **1144** supports multiple analog audio outputs. In other further embodiments, audio output coupling **1144** supports a single analog output.

In certain embodiments, audio output coupling **1144** supports a digital output protocol. In certain further embodiments, audio output coupling **1144** supports at least part of the MP3 protocol. In certain further embodiments, audio output coupling **1144** supports at least part of the AC3 protocol.

In certain embodiments, video display device **1158** is a flat panel display device.

FIG. **8** depicts a system block diagram of a further embodiment **1000** of FIG. **6** incorporating an internal audio output device **1148** in accordance with an aspect of the invention.

As in FIG. **1**, portable conference center **1000** includes a processor **1010**. Processor **1010** is coupled **1102** with wireless data capture interface **1100**. Processor **1010** is coupled **1112** with video camera **1110**. Processor **1010** is coupled **1122** with audio input device **1120**. Processor **1010** is coupled **1132** with network interface **1130**. Processor **1010** is coupled **1142** with audio output interface **1140**. Processor **1010** is coupled **1152** with video display interface **1150**.

As in FIG. **1**, processor **1010** includes local instruction processor **1020** accessing **1032** local non-volatile memory **1030** to execute program code segments. Local instruction processor **1020** is coupled **1102** with wireless data capture interface **1100**. Local instruction processor **1020** is coupled **1112** with video camera **1110**. Local instruction processor **1020** is coupled **1122** with audio input device **1120**. Local instruction processor **1020** is coupled **1132** with network interface **1130**. Local instruction processor **1020** is coupled **1142** with audio output interface **1140**. Local instruction processor **1020** is coupled **1152** with video display interface **1150**.

As in FIG. **6**, portable conference center **1000** includes video display **1158** coupled **1156** to video display interface **1150**. In certain embodiments, video display **1158** includes a flat panel display.

In distinction with FIGS. **1** and **6**, portable conference center **1000** includes audio output device **1148** coupled **1146** to audio output interface **1150**. In certain embodiments, audio output device **1148** includes a single audio speaker. In certain embodiments, audio output device **1148** includes multiple audio speakers. In certain embodiments, audio output device **1148** includes a flat, transparent audio speaker mounted over the video display device **1158**.

In certain embodiments, network interface **1130** coupling **1132** includes a standard computer bus. In certain further embodiments, network interface coupling **1132** is at least partially compliant with the standardized bus. In other further embodiments, network interface coupling **1132** is the PCMCIA bus and network interface **1130** is a PCMCIA bus card.

FIG. **9** depicts an application of further embodiment **1000** of FIG. **8** employing a wireless data capture device **1500**.

Portable conference center **1000** wireless data capture interface **1100** of FIG. **1** is coupled **1104** to wireless data capture device **1500**. Wireless data capture device **1500** is situated proximate to a white board **1502** in certain embodiments. Wireless data capture device **1500** is situated proximate to a back projection system **1502** in certain embodiments. Wireless data capture device **1500** is situated proximate to a flat panel display **1502** in certain embodiments.

In certain embodiments, wireless data capture coupling **1104** supports a wireline physical transport layer. In certain further embodiments, wireless data capture coupling **1104** physical transport layer includes a fiber optic component. In further embodiments, wireless data capture coupling **1104** physical transport layer includes a twisted pair component. In further embodiments, wireless data capture coupling **1104** physical transport layer includes a standardized bus component.

In certain embodiments, wireless data capture coupling **1104** supports a wireless physical transport layer. In certain further embodiments, wireless data capture coupling **1104** physical transport layer interacts in the infra-red spectrum. In other further embodiments, wireless data capture coupling **1104** physical transport layer interacts in the radio spectrum. In certain further embodiments, wireless data capture coupling **1104** physical transport layer interacts in the radio spectrum supporting at least part of the Bluetooth standard.

The network interface **1130** is coupled **1034** to an external network. In certain embodiments, network coupling **1134** supports a wireline physical transport layer. In certain further embodiments, the network coupling **1134** physical transport layer includes a fiber optic component. In further embodiments, the network coupling **1134** physical transport layer includes a twisted pair component. In other further embodiments, the network coupling **1134** physical transport layer includes a coaxial cable component.

In certain embodiments, network coupling **1134** supports a wireless physical transport layer. In certain further embodiments, the network coupling **1134** physical transport layer interacts in the infra-red spectrum. In other further embodiments, the network coupling **1134** physical transport layer interacts in the radio spectrum. In further embodiments, the network coupling **1134** radio spectrum physical transport layer interacts in the microwave spectrum.

In certain embodiments, network interface **1130** coupling **1132** includes a standard computer bus. In certain further embodiments, network interface coupling **1132** is at least partially compliant with the standardized bus. In other further embodiments, network interface coupling **1132** is the PCMCIA bus and network interface **1130** is a PCMCIA bus card.

FIG. **10** depicts a system block diagram of a further embodiment **1000** of FIG. **8** incorporating a selector device in accordance with an aspect of the invention.

As in FIG. **1**, portable conference center **1000** includes a processor **1010**. Processor **1010** is coupled **1102** with wireless data capture interface **1100**. Processor **1010** is coupled **1112** with video camera **1110**. Processor **1010** is coupled **1122** with audio input device **1120**. Processor **1010** is coupled **1132** with network interface **1130**. Processor **1010** is coupled **1142** with audio output interface **1140**. Processor **1010** is coupled **1152** with video display interface **1150**.

As in FIG. **1**, processor **1010** includes local instruction processor **1020** accessing **1032** local non-volatile memory **1030** to execute program code segments. Local instruction processor **1020** is coupled **1102** with wireless data capture interface **1100**. Local instruction processor **1020** is coupled **1112** with video camera **1110**. Local instruction processor **1020** is coupled **1122** with audio input device **1120**. Local instruction processor **1020** is coupled **1132** with network interface **1130**. Local instruction processor **1020** is coupled **1142** with audio output interface **1140** . Local instruction processor **1020** is coupled **1152** with video display interface **1150**.

As in FIG. **6**, portable conference center **1000** includes video display **1158** coupled **1156** to video display interface **1150**. In certain embodiments, video display **1158** includes a flat panel display.

As in FIG. **8**, portable conference center **1000** includes audio output device **1148** coupled **1146** to audio output interface **1150**. In certain embodiments, audio output device **1148** includes a single audio speaker. In certain embodiments, audio output device **1148** includes multiple audio speakers. In certain embodiments, audio output device **1148** includes a flat, transparent audio speaker mounted over the video display device **1158**.

In distinction with FIGS. **1**, **6** and **8**, portable conference center **1000** includes a selector device **1170** coupled **1172** to processor **1010** and further coupled **1172** to local instruction processor **1020**.

In certain embodiments, the selector device **1170** and video display **1158** may be proximate. In certain further embodiments, selector device **1170** may include a touch pad. In other further embodiments, selector device **1170** may include a push stick. In other further embodiments, selector device **1170** may include a wireless mouse. In other further embodiments, selector device **1170** may include a television channel selector. In certain embodiments, selector device **1170** may be located proximate to video display **1158**. Certain further embodiments may locate selector device **1170** above, below, to the right or left of video display **1158**. In certain further embodiments, selector device **1170** may include a transparent, touch sensitive panel integrated as a layer on top of video display **1158**.

FIG. **11** depicts an application of further embodiment **1000** of FIG. **10** using an integrated video display and selector device employing a wireless data capture device **1500**.

Portable conference center **1000** wireless data capture interface **1100** is coupled **1104** to wireless data capture device **1500**. Wireless data capture device **1500** is situated proximate to a white board **1502** in certain embodiments. Wireless data capture device **1500** is situated proximate to a back projection system **1502** in certain embodiments. Wireless data capture device **1500** is situated proximate to a flat panel display **1502** in certain embodiments.

In certain embodiments, wireless data capture coupling **1104** supports a wireline physical transport layer. In certain further embodiments, wireless data capture coupling **1104** physical transport layer includes a fiber optic component. In further embodiments, wireless data capture coupling **1104** physical transport layer includes a twisted pair component. In further embodiments, wireless data capture coupling **1104** physical transport layer includes a standardized bus component.

In certain embodiments, wireless data capture coupling **1104** supports a wireless physical transport layer. In certain further embodiments, wireless data capture coupling **1104** physical transport layer interacts in the infra-red spectrum. In other further embodiments, wireless data capture coupling **1104** physical transport layer interacts in the radio spectrum. In certain further embodiments, wireless data capture coupling **1104** physical transport layer interacts in the radio spectrum supporting at least part of the Bluetooth standard.

The network interface **1130** is coupled **1034** to an external network. In certain embodiments, network coupling **1134** supports a wireline physical transport layer. In certain further embodiments, the network coupling **1134** physical transport layer includes a fiber optic component. In further embodiments, the network coupling **1134** physical transport layer includes a twisted pair component. In other further embodiments, the network coupling **1134** physical transport layer includes a coaxial cable component.

In certain embodiments, network coupling **1134** supports a wireless physical transport layer. In certain further embodiments, the network coupling **1134** physical transport layer interacts in the infra-red spectrum. In other further embodiments, the network coupling **1134** physical transport layer interacts in the radio spectrum. In further embodiments, the network coupling **1134** radio spectrum physical transport layer interacts in the microwave spectrum.

In certain embodiments, network interface **1130** coupling **1132** includes a standard computer bus. In certain further embodiments, network interface coupling **1132** is at least partially compliant with the standardized bus. In other further embodiments, network interface coupling **1132** is the PCMCIA bus and network interface **1130** is a PCMCIA bus card.

In certain embodiments, the selector device **1170** and video display **1158** may be proximate. In certain further embodiments, selector device **1170** may include a transparent, touch sensitive panel integrated as a layer on top of video display **1158**.

FIG. **12** depicts an application of further embodiment **1000** of FIG. **10** using a touch pad selector device employing a wireless data capture device **1500**.

Portable conference center **1000** wireless data capture interface **1100** of FIG. **1** is coupled **1104** to wireless data capture device **1500**. Wireless data capture device **1500** is situated proximate to a white board **1502** in certain embodiments. Wireless data capture device **1500** is situated proximate to a back projection system **1502** in certain embodiments. Wireless data capture device **1500** is situated proximate to a flat panel display **1502** in certain embodiments.

In certain embodiments, wireless data capture coupling **1104** supports a wireline physical transport layer. In certain further embodiments, wireless data capture coupling **1104** physical transport layer includes a fiber optic component. In further embodiments, wireless data capture coupling **1104** physical transport layer includes a twisted pair component. In further embodiments, wireless data capture coupling **1104** physical transport layer includes a standardized bus component.

In certain embodiments, wireless data capture coupling **1104** supports a wireless physical transport layer. In certain further embodiments, wireless data capture coupling **1104** physical transport layer interacts in the infra-red spectrum. In other further embodiments, wireless data capture coupling **1104** physical transport layer interacts in the radio spectrum. In certain further embodiments, wireless data capture coupling **1104** physical transport layer interacts in the radio spectrum supporting at least part of the Bluetooth standard.

The network interface **1130** is coupled **1034** to an external network. In certain embodiments, network coupling **1134** supports a wireline physical transport layer. In certain further embodiments, the network coupling **1134** physical transport layer includes a fiber optic component. In further embodiments, the network coupling **1134** physical transport layer includes a twisted pair component. In other further embodiments, the network coupling **1134** physical transport layer includes a coaxial cable component.

In certain embodiments, network coupling **1134** supports a wireless physical transport layer. In certain further embodiments, the network coupling **1134** physical transport layer interacts in the infra-red spectrum. In other further embodiments, the network coupling **1134** physical transport layer interacts in the radio spectrum. In further embodiments, the network coupling **1134** radio spectrum physical transport layer interacts in the microwave spectrum.

In certain embodiments, network interface **1130** coupling **1132** includes a standard computer bus. In certain further embodiments, network interface coupling **1132** is at least partially compliant with the standardized bus. In other further embodiments, network interface coupling **1132** is the PCMCIA bus and network interface **1130** is a PCMCIA bus card.

In certain embodiments, the selector device **1170** and video display **1158** may be proximate. In certain further embodiments, selector device **1170** may include a touch pad. In other further embodiments, selector device **1170** may include a push stick. In other further embodiments, selector device **1170** may include a wireless mouse. In other further embodiments, selector device **1170** may include a television channel selector. In certain embodiments, selector device **1170** may be located proximate to video display **1158**. Certain further embodiments may locate selector device **1170** above, below, to the right or left of video display **1158**.

FIG. **13** depicts an application of further embodiment **1000** of FIG. **10** using a touch pad selector device employing a wireless data capture device **1500** and supporting a windowing system which in turn supports a web browser.

Portable conference center **1000** wireless data capture interface **1100** of FIG. **1** is coupled **1104** to wireless data capture device **1500**. Wireless data capture device **1500** is situated proximate to a white board **1502** in certain applications. Wireless data capture device **1500** is situated proximate to a back projection system **1502** in certain applications. Wireless data capture device **1500** is situated proximate to a flat panel display **1502** in certain applications.

In certain embodiments, wireless data capture coupling **1104** supports a wireline physical transport layer. In certain further embodiments, wireless data capture coupling **1104** physical transport layer includes a fiber optic component. In further embodiments, wireless data capture coupling **1104** physical transport layer includes a twisted pair component. In further embodiments, wireless data capture coupling **1104** physical transport layer includes a standardized bus component.

In certain embodiments, wireless data capture coupling **1104** supports a wireless physical transport layer. In certain further embodiments, wireless data capture coupling **1104** physical transport layer interacts in the infra-red spectrum. In other further embodiments, wireless data capture coupling **1104** physical transport layer interacts in the radio spectrum. In certain further embodiments, wireless data capture coupling **1104** physical transport layer interacts in the radio spectrum supporting at least part of the Bluetooth standard.

The network interface **1130** is coupled **1034** to an external network. In certain embodiments, network coupling **1134** supports a wireline physical transport layer. In certain further embodiments, the network coupling **1134** physical transport layer includes a fiber optic component. In further embodiments, the network coupling **1134** physical transport layer includes a twisted pair component. In other further embodiments, the network coupling **1134** physical transport layer includes a coaxial cable component.



In certain embodiments, network coupling **1134** supports a wireless physical transport layer. In certain further embodiments, the network coupling **1134** physical transport layer interacts in the infra-red spectrum. In other further embodiments, the network coupling **1134** physical transport layer interacts in the radio spectrum. In further embodiments, the network coupling **1134** radio spectrum physical transport layer interacts in the microwave spectrum.

In certain embodiments, network interface **1130** coupling **1132** includes a standard computer bus. In certain further embodiments, network interface coupling **1132** is at least partially compliant with the standardized bus. In other further embodiments, network interface coupling **1132** is the PCMCIA bus and network interface **1130** is a PCMCIA bus card.

In certain embodiments, the selector device **1170** and video display **1158** may be proximate. In certain further embodiments, selector device **1170** may include a touch pad. In certain embodiments, selector device **1170** may be located proximate to video display **1158**. Certain further embodiments may locate selector device **1170** above, below, to the right or left of video display **1158**.

FIG. **14** depicts a system block diagram of a further embodiment **1000** of FIGS. **8** and **4** incorporating a selector device effected through a module interface in accordance with an aspect of the invention.

As in FIG. **1**, portable conference center **1000** includes a processor **1010**. Processor **1010** is coupled **1102** with wireless data capture interface **1100**. Processor **1010** is coupled **1112** with video camera **1110**. Processor **1010** is coupled **1122** with audio input device **1120**. Processor **1010** is coupled **1132** with network interface **1130**. Processor **1010** is coupled **1142** with audio output interface **1140**. Processor **1010** is coupled **1152** with video display interface **1150**.

As in FIG. **1**, processor **1010** includes local instruction processor **1020** accessing **1032** local non-volatile memory **1030** to execute program code segments. Local instruction processor **1020** is coupled **1102** with wireless data capture interface **1100**. Local instruction processor **1020** is coupled **1112** with video camera **1110**. Local instruction processor **1020** is coupled **1122** with audio input device **1120**. Local instruction processor **1020** is coupled **1132** with network interface **1130**. Local instruction processor **1020** is coupled **1142** with audio output interface **1140**. Local instruction processor **1020** is coupled **1152** with video display interface **1150**.

As in FIG. **4**, portable conference center **1000** includes a module interface **1160**, coupled to at least one of the following interfaces. Network interface **1130** couples **1162** to module interface **1160**. Audio output interface **1140** couples **1164** to module interface **1160**. Video display interface **1150** coupled **1166** to module interface **1160**.

In distinction with FIGS. **1**, **4** and **10**, selector device **1170** is coupled **1174** to module interface **1160**. For the sake of simplicity the following discussion will assume the four interfaces are coupled but all combinations of couplings of the first three interfaces plus coupling of the selector device **1170** are considered within the intended scope of the invention.

In certain embodiments, module interface **1160** supports a computer bus. In certain further embodiments, module interface **1160** supports a live insertion and removal computer bus. In certain further embodiments, module interface **1160** supports at least part of the PCMCIA standard.

In certain embodiments, network interface **1130** couples **1162** as an addressable entity on the module interface **1160**. In certain embodiments, audio output interface **1140** couples **1164** as an addressable entity on the module interface **1160**. In certain embodiments, video display interface **1150** couples **1166** as an addressable entity on the module interface **1160**.

In certain embodiments, module interface **1160** supports a wireline physical transport layer. In certain further embodiments, module interface **1160** physical transport layer support includes fiber optic cable. In further embodiments, module interface **1160** physical transport layer support includes fiber channel. In other further embodiments, module interface **1160** physical transport layer support includes coaxial cable. In other further embodiments, module interface **1160** physical transport layer support includes multi-wire cabling. In other further embodiments, module interface **1160** physical transport layer support includes ATM protocols.

FIG. **15** depicts an application system block diagram of certain embodiments **1000** utilizing a module interface connection **1168** from a first computer **1600** coupled **1612** to a second computer **1610**, which in turn drives **1622** a projector **1620** and accesses **1632** a database **1630** in accordance with an aspect of the invention.

Portable conference center **1000** using wireless data capture interface **1100** is coupled **1104** to wireless data capture device **1500**. Portable conference center **1000** using module interface **1160** couples **1168** to first computer **1600**.

First computer **1600** couples **1612** to second computer **1610**. In certain circumstances coupling **1612** is a network connection. In certain further circumstances, the network coupling **1612** is within a LAN. In certain further circumstances, the network coupling **1612** traverses a firewall. Second computer **1610** drives **1622** projector **1620**. Second computer **1610** accesses **1632** database **1630**. Database **1630** may be contained in second computer **1610** in certain circumstances. Database **1630** may be accessed across a network by second computer **1610**.

Note that in certain cases it is advantageous for either first computer **1600** or second computer **1610** to store the audio-video streams and/or audio-video data streams either in whole or in part for later use. This is advantageous for many circumstances, such as classrooms, lectures, or other presentations.

FIG. **16** depicts a system application based upon the application system block diagram of FIG. **15** using a back projector **1620** in accordance with an aspect of the invention.

Portable conference center **1000** wireless data capture interface **1100** is coupled **1104** to wireless data capture device **1500**. Wireless data capture device **1500** is situated proximate to a white board **1502** in certain embodiments. Wireless data capture device **1500** is situated proximate to a back projection system **1502** in certain embodiments. Wireless data capture device **1500** is situated proximate to a flat panel display **1502** in certain embodiments.

Portable conference center **1000** module interface **1160** couples **1168** to first computer **1600**. First computer **1600** includes a first computer display device **1602**, first computer audio output devices **1604** and a selector device **1606**. Portable conference center **1000** video display interface **1150** traverses module coupling **1168** to drive at least part of the first computer display **1602**. Portable conference center **1000** audio output interface **1150** traverses module coupling **1168** to drive at least part of the audio output devices **1604**. Local instruction processor **1020** accesses selector device **1170** via **1174** module interface **1160** coupling **1168** to first computer **1600** and presents data by first computer selector device **1606**.

First computer **1600** couples **1612** to second computer **1610**. In certain circumstances coupling **1612** is a network connection. In certain further circumstances, the network coupling **1612** is within a LAN. In certain further circumstances, the network coupling **1612** traverses a firewall. Second computer **1610** drives **1622** back projector **1620**. Second computer **1610** accesses **1632** database **1630**.

In certain situations, back projector **1620** is a flat panel display. In other situations, back projector **1620** is a large television set. In other situations, back projector **1620** is a television supporting HDTV.

The wireless data capture device **1500** is used in this application to capture a wireless mouse. Wireless data capture coupling **1104** sends a stream of information to wireless data capture interface **1100**. The local audio video data stream processing program code segment **1422** residing in the local nonvolatile memory **1030** is accessed **1032** and executed by local instruction processor **1020** to create the local audio video data stream in virtual mouse mode. The local audio video data stream is sent **1432** by local instruction processor **1020** through network interface **1130** through module interface **1160** across physical transport layer **1168** to the first computer **1600**.

Second computer **1610** generates a graphical representation of accessed elements based upon the virtual mouse stream extracted from the local audio video data stream generated in first computer **1600**. The graphical representation is processed to create a second video stream and to modify the database **1630**. The second video stream is sent via **1612** to first computer **1600** where it is displayed with the combined effect of the virtual mouse sensed by the wireless data capture device **1500** as part of the local audio video data stream by portable conference center **1000** and sent via **1168** to first computer **1600**.

FIG. **17** depicts a system application based upon the application system block diagram of FIG. **15** using a front projector **1620** in accordance with an aspect of the invention. The description given for FIG. **16** is applicable in its entirety for this figure with the projector **1620** being a front projector rather than back projector as in FIG. **16**.

FIG. **18** depicts an application system block diagram of certain embodiments **1000** utilizing the network interface coupled **1134** to a second computer **1610**, which in turn drives **1622** a projector **1620** and accesses **1632** a database **1630** in accordance with an aspect of the invention.

Portable conference center **1000** using wireless data capture interface **1100** is coupled **1104** to wireless data capture device **1500**. Portable conference center **1000** using network interface **1130** couples **1134** to second computer **1610**.

In certain circumstances coupling **1134** is a network connection. In certain further circumstances, the network coupling **1134** is within a LAN. In certain further circumstances, the network coupling **1134** traverses a firewall. Second computer **1610** drives **1622** projector **1620**. Second computer **1610** accesses **1632** database **1630**. Database **1630** may be contained in second computer **1610** in certain circumstances. Database **1630** may be accessed across a network by second computer **1610**.

FIG. **19** depicts a system application based upon the application system block diagram of FIG. **18** using a back projector **1620** in accordance with an aspect of the invention.

Portable conference center **1000** wireless data capture interface **1100** is coupled **1104** to wireless data capture device **1500**. Wireless data capture device **1500** is situated proximate to a white board **1502** in certain embodiments. Wireless data capture device **1500** is situated proximate to a back projection system **1502** in certain embodiments. Wireless data capture device **1500** is situated proximate to a flat panel display **1502** in certain embodiments.

Portable conference center **1000** using wireless data capture interface **1100** is coupled **1104** to wireless data capture device **1500**. Portable conference center **1000** using network interface **1130** couples **1134** to second computer **1610**. In certain circumstances coupling **1134** is a network connection. In certain further circumstances, the network coupling **1134** is within a LAN. In certain further circumstances, the network coupling **1134** traverses a firewall. Second computer **1610** drives **1622** back projector **1620**. Second computer **1610** accesses **1632** database **1630**.

In certain situations, back projector **1620** is a flat panel display. In other situations, back projector **1620** is a large television set. In other situations, back projector **1620** is a television supporting HDTV.

The wireless data capture device **1500** is used in this application to capture a wireless mouse. Wireless data capture coupling **1104** sends a stream of information to wireless data capture interface **1100**. The local audio video data stream processing program code segment **1422** residing in the local nonvolatile memory **1030** is accessed **1032** and executed by local instruction processor **1020** to create the local audio video data stream in virtual mouse mode.

Second computer **1610** generates a graphical representation of accessed elements based upon the virtual mouse stream extracted from the local audio video data stream generated in portable conference center **1000**. The graphical representation is processed to create a second video stream and to modify the database **1630**. The second video stream is sent via **1134** to portable conference center **1000** where it is displayed with the combined effect of the virtual mouse sensed by the wireless data capture device **1500** as part of the local audio video data stream by portable conference center **1000** and sent via **1168** to portable conference center **1000**.

FIG. **20** depicts a flowchart of several program code segments supporting the physical transport layers of the interfaces of the portable conference center in accordance with aspects of the invention.

Operation **1700** starts the operations of this flowchart. Arrow **1702** directs the flow of execution from operation **1700** to operation **1704**. Operation **1704** performs supporting the wireless data capture interface physical transport layer. Arrow **1706** directs execution from operation **1704** to operation **1708**. Operation **1708** terminates the operations of this flowchart. In certain embodiments, operation **1704** supports a wireline physical transport layer. In certain embodiments, operation **1704** supports a wireless physical transport layer. In certain further embodiments, operation **1704** supports interactions in the infra-red spectrum. In other further embodiments, operation **1704** supports interactions in the radio spectrum. In further embodiments, operation **1704** supports interactions at least partially compatible with the Bluetooth standard.

Arrow **1710** directs the flow of execution from starting operation **1700** to operation **1712**. Operation **1712** performs supporting network interface **1120** physical transport layer. Arrow **1714** directs execution from operation **1712** to operation **1708**. Operation **1708** terminates the operations of this flowchart. In certain embodiments, operation **1712** supports a wireline physical transport layer. In certain embodiments, operation **1712** supports a wireless physical transport layer. In certain embodiments, operation **1712** supports an ATM compatible physical transport layer.

Arrow **1720** directs the flow of execution from starting operation **1700** to operation **1722**. Operation **1722** performs supporting audio output interface **1140** physical transport layer. Arrow **1724** directs execution from operation **1722** to operation **1708**. Operation **1708** terminates the operations of this flowchart. In certain embodiments, operation **1722** supports digital signaling. In certain embodiments, operation **1722** supports analog signaling.

Arrow **1730** directs the flow of execution from starting operation **1700** to operation **1732**. Operation **1732** performs supporting video display interface **1150** physical transport layer. Arrow **1734** directs execution from operation **1732** to operation **1708**. Operation **1708** terminates the operations of this flowchart. In certain embodiments, operation **1732** supports flat panel protocols. In certain embodiments, operation **1732** supports RGB compatible signals. In certain embodiments, operation **1732** supports PAL compatible signals. In certain embodiments, operation **1732** supports HDTV compatible signals. In certain embodiments, operation **1732** supports analog signaling. In certain embodiments, operation **1732** supports digital signaling.

Arrow **1740** directs the flow of execution from starting operation **1700** to operation **1742**. Operation **1742** performs determining selector device **1170** state. Arrow **1744** directs execution from operation **1742** to operation **1708**. Operation **1708** terminates the operations of this flowchart. In certain embodiments, operation **1742** uses transfers via module interface **1160** to an external computer selector device as the raw data to determine selector device state. In certain other embodiments, operation **1742** examines the local audio stream to determine selector states. In certain embodiments, operation **1742** uses local selector device reading to determine the selector device state.

FIG. **21** depicts a detail flowchart of operation **1412** supporting decompression of an external audio-video stream in accordance with some aspects of the invention.

Arrow **1760** directs the flow of execution from starting operation **1412** to operation **1762**. Operation **1762** performs decompressing the external audio-video stream to create the received video stream. Arrow **1764** directs execution from operation **1762** to operation **1766**. Operation **1766** terminates the operations of this flowchart.

Arrow **1770** directs the flow of execution from starting operation **1412** to operation **1772**. Operation **1772** performs decompressing the external audio-video stream to create the received audio stream. Arrow **1774** directs execution from operation **1772** to operation **1766**. Operation **1766** terminates the operations of this flowchart.

Note that certain embodiments may include but are not limited by a preprocessing operation which partitions the audio and video into separate streams.

FIG. **22** depicts a detail flowchart of operation **1422** supporting compression of the local audio and local video streams in accordance with some aspects of the invention.

Arrow **1790** directs the flow of execution from starting operation **1422** to operation **1792**. Operation **1792** performs compressing the local video stream to create the local audio video data stream. Arrow **1794** directs execution from operation **179 2** to operation **1796**. Operation **1796** terminates the operations of this flowchart.

Arrow **1800** directs the flow of execution from starting operation **1422** to operation **1802**. Operation **1802** performs compressing the local audio stream to create the local audio video data stream. Arrow **1804** directs execution from operation **1802** to operation **1796**. Operation **1796** terminates the operations of this flowchart.

FIG. **23** depicts a flowchart showing supporting for TCPIP protocols across the network interface **1160** in accordance with an aspect of the invention.

Operation **1820** starts the operations of this flowchart. Arrow **1822** directs the flow of execution from operation **1820** to operation **1824**. Operation **1824** performs supporting TCPIP using the network interface **1130**. Arrow **1826** directs execution from operation **1824** to operation **1828**. Operation **1828** terminates the operations of this flowchart.

FIG. **24** depicts a detail flowchart of operation **1824** supporting one or more of Wireless Application Protocol, Internet access and access to the World Wide Web.

Arrow **1840** directs the flow of execution from starting operation **1824** to operation **1842**. Operation **1842** performs supporting the Wireless Application Protocol. Arrow **1844** directs execution from operation **1842** to operation **1846**. Operation **1846** terminates the operations of this flowchart.

Arrow **1850** directs the flow of execution from starting operation **1824** to operation **1852**. Operation **1852** performs supporting Internet access. Arrow **1854** directs execution from operation **1852** to operation **1846**. Operation **1846** terminates the operations of this flowchart.

Arrow **1860** directs the flow of execution from starting operation **1824** to operation **1862**. Operation **1862** performs supporting World Wide Web access. Arrow **1864** directs execution from operation **1862** to operation **1846**. Operation **1846** terminates the operations of this flowchart.

The preceding embodiments have been provided by way of example and are not meant to constrain the scope of the following claims.

What is claimed is:

**1**. A portable video conference system supporting a network-based video conference, the system comprising:

a processor accessing a local non-volatile memory, the processor coupled to a wireless data capture interface, a video camera, a video display interface, an audio input device, an audio output interface, and a network interface;

a portable wireless device coupled to the wireless data capture interface, the portable wireless device adapted to capture writing or erasing from a writing surface;

wherein the local non-volatile memory comprises:

a program code segment for repeatedly receiving from the network interface an external audio-video stream to create a received video stream presented to the video display interface and to create a received audio stream presented to the audio output interface;

a program code segment for receiving a local video stream from the video camera and receiving a local audio stream from the audio input device and receiving the wireless data capture state from the wireless data capture interface to create a local audio video data stream;

a program code segment for sending the local audio video data stream to the network interface; and

wherein the local instruction processor executes the program code segment residing in local non-volatile memory for receiving the local video stream from the video camera and receiving the local audio stream from the audio input device and receiving the wireless capture data capture state from the wireless data capture interface to create the local audio video data stream.

**2**. A portable video conference module as recited in claim **1**, further comprising:

a module interface coupling the portable video conference module to a display device and audio output device;

wherein the received video stream presented to the video display interface includes sending the received video steam via the module interface for presentation to the display device;

wherein the received audio stream presented to the audio output interface includes sending the received audio stream via the module interface for presentation to the audio output device of the computer.

**3**. A portable video conference module as recited in claim **2**, further comprising:

a mechanical attachment mechanism for mechanically attaching the portable video conference module to a support.

**4**. A portable video conference module as recited in claim **1**, further comprising:

a video display coupled to the video display interface.

**5**. A portable video conference module as recited in claim **4**, further comprising:

a selector device coupled to the local instruction processor.

**6**. A portable video conference module as recited in claim **5**, wherein the selector device includes a touch sensitive panel integrated with the video display.

**7**. A portable video conference module as recited in claim **1**, wherein the network interface supports a wireless physical transport layer.

**8**. A portable video conference module as recited in claim **1**, further comprising:

an audio output device coupled to the audio output interface.

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